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REVISED COURSE OF STUDY

FOR THE

COMMON SCHOOLS

—OF—

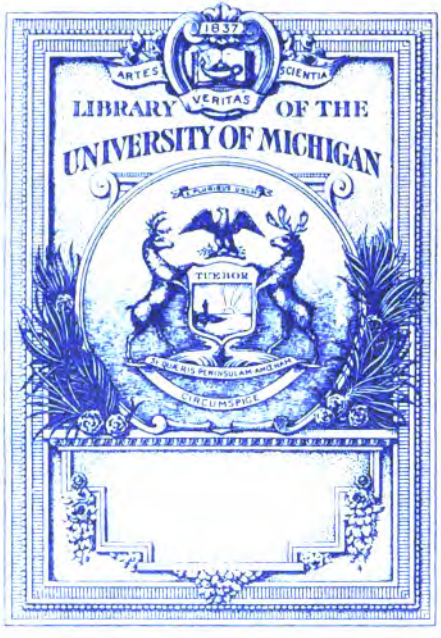
ILLINOIS.

PREPARED BY A COMMITTEE OF COUNTY SUPERINTENDENTS

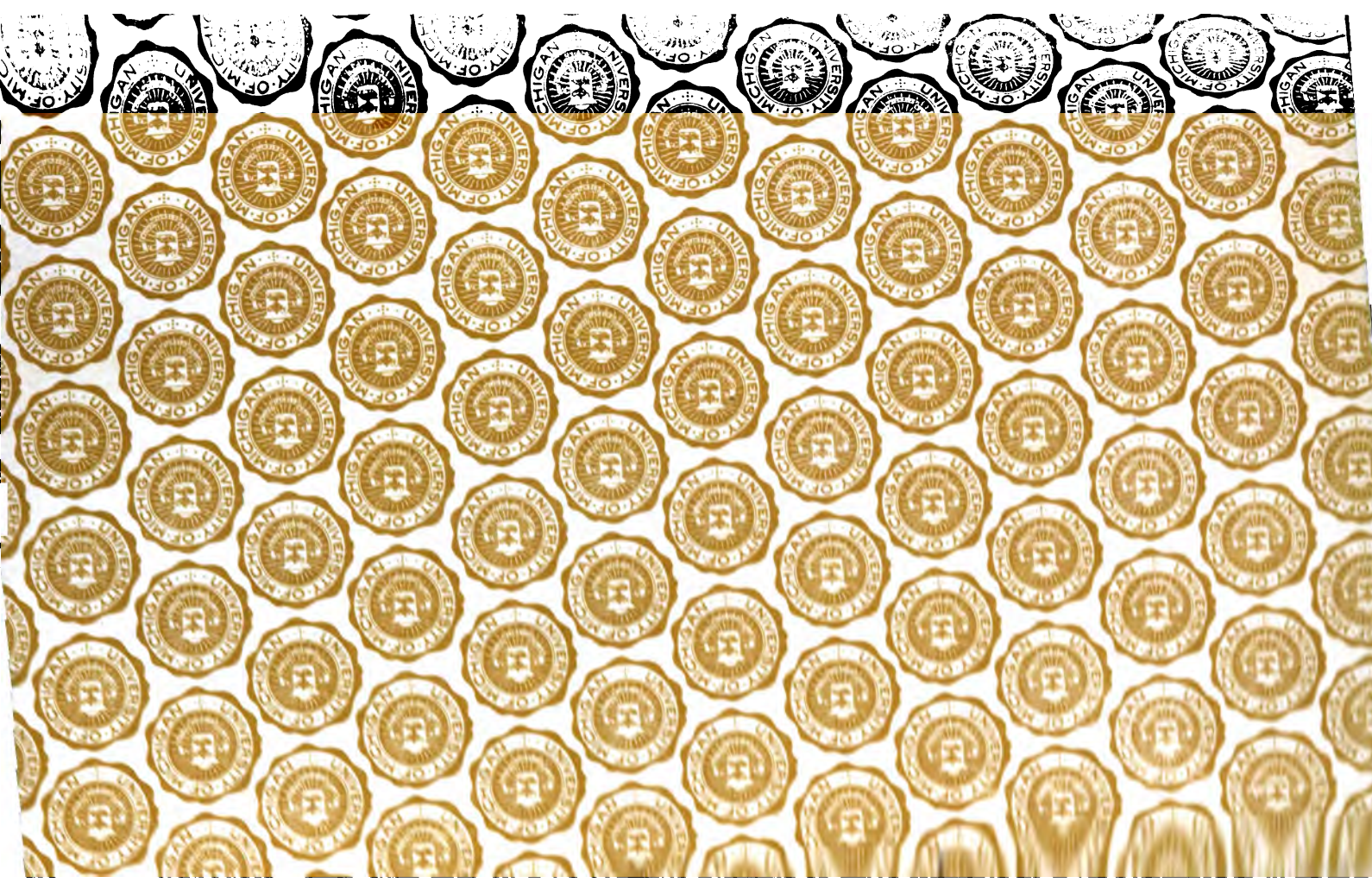
—AND—

PUBLISHED BY THE STATE DEPARTMENT OF PUBLIC INSTRUCTION IN 1889, AND REVISED IN 1894 BY A COMMITTEE APPOINTED BY THE ILLINOIS STATE TEACHERS' ASSOCIATION.

TAYLORVILLE, ILL.:
SCHOOL NEWS PRINT, C. M. PARKER, PUBLISHER.
1894.



THE GIFT OF
Prof. F. C. Newcombe



Illinois state teachers' association.
County superintendents' section.

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PUBLISHER'S ANNOUNCEMENT.

This edition of the Course of Study has been carefully revised and corrected by and with the approval of the members of the committee that wrote and arranged it. The superior excellence of the Course merits the best typographical display. This we have tried to give it, and we feel confident that superintendents, teachers, and pupils will be pleased with our efforts.

PRICE.

We know by an experience of more than ten years, that the judicious use of a well arranged course of study in the rural districts, will be highly beneficial to the educational interests of any county, in bringing system and order out of confusion and chaos. That this Course may have a widespread introduction, we have placed the price at the minimum—only a small profit above the cost of production. In quantities of five hundred copies or more, the price is $5.00 per hundred; and in smaller quantities, $6.00 per hundred. Single copies 10 cents, postpaid. The former edition has been successfully used in a large number of states, and more than forty thousand copies have been sold. It is hoped that this revised edition will meet with equal favor and success.

CORRESPONDENCE SOLICITED.

Correspondence with reference to the introduction and use of this Course is solicited, and will receive careful attention. From month to month, during the school-year, THE SCHOOL NEWS AND PRACTICAL EDUCATOR will publish many practical articles containing helps and suggestions on the work given in this Course for the current month; also suggestions on how to classify the school, use the Course, etc. So far as we know, this is the only journal now published that makes a specialty assisting the rural and village schools in following a systematic course of study. We shall aim to make THE SCHOOL NEWS a *manual* of the work to be done each month.

C. M. PARKER, Editor School News,
TAYLORVILLE, ILL.

Reg. F. C. Newcomb
9-17-1923

PREFACE TO FIRST EDITION.

To the County Superintendents of Illinois:

The committee selected by you on April 10, 1889, to prepare a course of study for the common schools of Illinois, submits herewith its report:

In the preparation of this course, the committee has consulted the various manuals now in use in the State, and has kept in view the varied needs and conditions of the different localities. Though no claim is made that the work here outlined can not be improved, it is believed that it may be adapted to the schools of every county in the State.

The thanks of the committee are due to Superintendent of Public Instruction Richard Edwards, who prepared the two years' higher course, to W. S. Mack for the drawing, to W. H. Ray for suggestions in teaching reading in higher course, to W. H. Hatch for suggestions in teaching botany, to Fernando Sanford for suggestions in physics, and to B. P. Colton for suggestions in zoology.

The committee also desire to acknowledge the great assistance rendered them by Messrs. W. H. Gantz, Jonathan Piper, and George P. Brown for aid in compiling, criticizing, and correcting the body of the work.

READING CIRCLE.

Knowing the value of good reading as an educating influence, we cordially recommend to every pupil and teacher The Reading Circle Work as announced in another place by its manager, E. A. Gastman, and that the course be adopted in every school. It is self-evident that as a child is taught to read, good reading matter should be provided.

G. R. SHAWHAN, Supt. Champaign County.
J. A. MILLER, Supt. McLean County.
GEO. W. OLDFATHER, Supt. Knox County.
GEO. I. TALBOT, Supt. DeKalb County.
J. D. BENEDICT, Supt. Vermilion County.

PREFACE TO THE SECOND EDITION.

To the County Superintendents and Teachers of Illinois:

The committee appointed by the State Teachers' Association, December 28, 1893, to revise the Course of Study for the Common Schools of Illinois, begs to lay before you the result of its labors. What experience in the schoolroom has demonstrated to need improvement, has been carefully considered, and we believe this revised edition will tend to produce still better results in the schoolroom. We are well aware that to prescribe a course for a state as large as Illinois is a difficult task, and we do not expect that it may suit the wishes and tastes of all. The lengths of term in different parts of the State, the changed conditions under which the teachers must labor under these circumstances, will in some instances necessitate an adaption of branches as well as of the time allotted to each branch. At any rate, even an ideal course of study could be directive only, not mandatory; and it is fervently hoped that superintendents and teachers will regard this course as prepared with the latter end in view. We do not claim perfection or infallibility in the work laid down for the several years, and hence, we do not wish to restrain the liberty of those for whom the course is intended, when they can do better. Nor are the changes in this revision so radical as to conflict with the suggestions and directions of the first edition.

The committee feels indebted to Dr. Frank H. McMurry, of the University of Illinois, for the course in natural science.

The attention of the county superintendents and teachers is respectfully directed to the announcements of the managers of the Teachers' and Pupils' Reading Circles, and we bespeak for these agencies for better work, the co-operation of all.

HENRY RAAB, Supt. Public Instruction.
GEO. R. SHAWHAN, Supt. Champaign County.
HENRY FOSTER, Supt. Livingston County.
JOSEPH M. PIPER, Supt. Ogle County.
A. C. BUTLER, Prin. Taylorville Township High School.

OUTLINE OF THE COURSE.

PRIMARY GRADES...

- First Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Language.
  - Number.
  - Hygiene.
  - Drawing.
- Second Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Language.
  - Number.
  - Hygiene.
  - Drawing.
- Third Year.... .....
  - Reading.
  - Spelling.
  - Writing.
  - Language.
  - Arithmetic.
  - Physiology.
  - Drawing.
- Fourth Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Language.
  - Arithmetic.
  - Physiology.
  - Geography.
  - Drawing.

GRAMMAR GRADES..

- Fifth Year..... .....
  - Reading.
  - Spelling.
  - Writing.
  - Grammar.
  - Arithmetic.
  - Geography.
  - Science.
  - Drawing.
- Sixth Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Grammar.
  - Arithmetic.
  - Physiology.
  - History.
  - Science.
  - Drawing.
- Seventh Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Grammar.
  - Arithmetic.
  - Geography.
  - History.
  - Science.
  - Drawing.
- Eighth Year.....
  - Reading.
  - Spelling.
  - Writing.
  - Grammar.
  - Arithmetic.
  - Geography.
  - History.
  - Science.
  - Drawing.

HIGHER COURSE.....

- First Year.....
  - General History.
  - Arithmetic or Algebra.
  - Physiology.
  - Botany and Bookkeeping.
- Second Year.....
  - General History.
  - Algebra.
  - Zoology.
  - Natural Philosophy.

INTRODUCTION.

THIS Course of Study is designed to be used by teachers and pupils, giving them a *definite* idea of the work required in each branch. It outlines in detail the several branches required by law to be taught in the public schools of the State. The aim of this work is:

First.—To advance the pupils, step by step, to give them credit for work done, and to lessen the damaging results of a too frequent change of teachers.

Second.—To *unify* the work in the common schools of the county, thus forming a basis for comparing, by means of written examinations or reviews, the results in the different schools, and for a closer and more effective supervision.

Third.—To keep constantly before the minds of pupils *subjects* and *principles*, instead of paragraphs and pages, thus practically solving the vexed question concerning diversity of text-books, and rendering it possible, by outlining by topics, for pupils to use whatever text-books they may have.

Fourth.—To enable directors and parents to know better what the common schools are accomplishing for their children, hoping in this way to gain their active sympathy in the work.

THE PLAN.

Eight grades of work below the High School are provided as follows:—

Primary Grades.—The Primary Grades include the first, second, third, and fourth years; and present the work of the chart, first, second, and third readers; also oral instruction in language, number, physiology and hygiene, and geography. In the third and fourth years, an elementary text-book in language may be used, and a text begun in arithmetic, the fourth year.

Grammar Grades.—These include the fifth, sixth, seventh, and eighth years; and present the work of the fourth and fifth readers; and include also elementary and advanced texts in arithmetic, grammar, geography, and history, and an elementary text in physiology and narcotics. Observation work in the natural sciences—zoology, botany, and natural philosophy—has been prepared.

Spelling, writing, and drawing, are to be included from the chart through the fifth reader.

Higher Course.—To aid those pupils who wish to continue their studies beyond the common branches, and to provide a more extended course of study for the smaller graded schools, a higher course has been prepared and

inserted. This covers two years of High School work, including texts in science, algebra, general history, and bookkeeping.

CLASSIFICATION.

The classification of the pupils in the different grades is a subject that must be left to the judgment of the individual teacher. The following is approximately what should be found in an average school of thirty pupils:

Reading.—Not more than five classes with nine recitations daily.

Spelling.—Two classes, one intermediate and one advanced. One recitation each, daily.

NOTE.—In the first four years, spelling should be taught in connection with reading.

Language.—Two classes as in spelling. One recitation each, daily.

NOTE.—In the first and second years, language should be taught in connection with reading.

Penmanship.—One class daily and *never* omitted.

Arithmetic.—One recitation, oral. In text, classes to suit conditions.

NOTE.—Where possible, combine two classes.

Geography.—Never more than two classes in the text-book. One recitation each, daily.

History.—Two classes, one elementary and one advanced. One recitation each, daily.

Grammar.—Two classes, one elementary and one advanced.

Physiology.—One class in oral work, and in sixth year, an elementary text for supplementary reading.

INDIVIDUALITY OF THE TEACHER.

In preparing the outline, great care has been taken not to encroach upon the individuality of the teacher, for that is invaluable. Except in the most primary work, the course states only *what* should be taught; to the individuality of the teacher is left the *how* to teach the subject. He should remember that he is at liberty to use any or all methods at his command. The only requirement is that *he do the work well.*

ALTERNATION OF WORK.

Country schools have practiced combining classes ever since they have been in existence. An effort is here made to combine classes in a systematic manner and in a way that will produce little trouble to pupils taking the course.

The course outlines two years' work in advanced grammar; the seventh year treats of the forms and properties of words, or etymology; the eighth year, of analysis of sentences. The pupils having studied language and an elementary text in grammar are prepared to begin with either year. Let all pu-

pils prepared to study advanced grammar this year, take, say the eighth year's work, analysis. The younger ones may be compelled to work a little harder at first, but soon will be able to keep up. Next year drop analysis, and let all who are in these grades study etymology or the seventh year's work. The third year let all study analysis again, and so on. Every two years, the book or course is completed and no one is wronged. Follow the same plan with geography and also with history in the seventh and eighth years. Three of the heaviest classes have thus entirely disappeared, and no one is injured. The same course may be pursued with the two years' work in the fourth reader, the two in fifth reader, and the two in elementary grammar in the fifth and sixth years. The oral exercises in physiology and hygiene in the first and second years, and also those in the third and fourth, may alternate in the same way, or the four years may be combined in one exercise.

The drawing may be given as a general exercise to all the pupils in the room, and may alternate from day to day with penmanship.

Three years of science work below the High School has been prepared—one in zoology, one in botany, and one in physics. These may alternate, but one branch being taken each year, all the pupils of the grammar grades doing the work in one class. In order that teachers may work together in county and local institutes, and assist one another in developing these topics, and that pupils changing districts may not be hindered in pursuing the course, or lose time by duplication of the work, the following order is recommended: Study Zoology 1894-5, Botany 1895-6, and Physics 1896-7.

No necessity exists for any country school, or even the small graded schools of six rooms or less, attempting to carry all the Higher Course every year. If the first year's work has been taught in the school this year, then let all pupils entering the Higher Course next year, take up the second year's work with the class preceding them. The third year, all who have not taken the first year can now take that year's work with the new class just entering, and thus complete the course. This can be done with all studies except mathematics and Latin; and, besides affording all pupils opportunity to take advanced studies, enables the teacher to give sufficient time and thought to each branch without laying a burden upon himself too great to be borne.

It is, also, believed that superintendents of counties in which the average term of school is but five or six months in each year instead of seven or eight, can easily adapt this course to their needs by dividing it into nine or ten years' work of six or seven months each, as individual cases demand. A regular course, adapted to circumstances, with definite work outlined, and pursued intelligently is recommended in all cases.

EXAMINATIONS OR WRITTEN REVIEWS.

To enforce this Course of Study the work has been divided as far as practicable, into months, and a system of monthly written examinations or reviews recommended.

The superintendent's examinations will occur on the last Friday in each month, or on such other date as the county superintendent may name. Questions confined to the limits prescribed in the outline will be prepared by the superintendent and furnished, sealed, to teachers in due time. Central and final examinations are left to each county superintendent.

RULES OF EXAMINATION.

The envelope containing the questions should be opened at 9:10 a. m. on the day of examination, by a committee of three, chosen from the school for that purpose. The committee should note the condition in which the seals are found, and report on the certificate enclosed with the questions. If the committee finds the seals broken they should report the same at once to the county superintendent for his investigation. When the committee has performed its work, the teacher should place the questions on the board or dictate to the pupils, as required, the contents of the examination sheet.

TO PUPILS.

1. Write on both sides of the paper, if it is necessary to complete a subject.

2. Number the answer to correspond with the question, placing the number in Roman notation on the line in the center of the page, thus separating the paragraphs.

3. Take your time and endeavor to do neat work. Use capital letters where they belong. Be careful with your penmanship, and correct in spelling. Paragraph all your work and study your language.

CONDUCTING THE EXAMINATIONS OR REVIEWS.

See that everything is in readiness for the examination or review, before the day arrives. These examinations or reviews, to be fair tests and to be valuable to either the teacher or pupil, must be fairly and honestly conducted. No aid whatever should be given. No question should be answered, and no suggestions should be made, that will in any way hint at the information sought in the examination. Do not let your tender-heartedness, nor your desire for high marks for your pupils, betray you into wronging them by making them believe they know that which they do not, and by raising them above the plane to which they really belong. Consider the moral effects of this on yourself and on your pupils.

MARKING THE PAPERS.

The teacher will place above each answer its *grade* (on a scale of 100 for the entire paper), and at the beginning of each paper write the sum of these grades. Mark *closely*, considering not how much information has been given in the answer, but whether it is the exact information called for. After grading, return the papers to the pupils in class, and require them to note their own mistakes. Permit no change. After inspection, papers should be collected and neatly bound in covers, and a permanent record made of the grade of each pupil. The county superintendent in his visits will call for these *monthly examination papers*, the *permanent record of grades*, and also for the *daily register*. Let them be kept in good condition.

COURSE OF STUDY.

FIRST YEAR.

TEXT-BOOK—First reader.
READING—First reader or readers.
SPELLING—Words from readers, and other familiar words.
WRITING—Form of letters.
LANGUAGE—In connection with reading.
NUMBERS—From 1 to 10 with combinations.
PHYSIOLOGY AND HYGIENE—Oral work.
DRAWING—See "Form Study and Drawing."

READING.

Books and Apparatus.—Slate, sponge, pencil, rule, and first reader. Pencil should be kept long and well sharpened.

Objects.—1. To recognize at sight the written and printed forms of the words found in the child's spoken vocabulary, and to pronounce them readily as wholes.

2. To write single words and combine them in easy sentences.

3. To separate them into their elementary sounds, and to combine sounds into words. To learn the names of the characters representing these sounds.

4. To represent these sounds by proper diacritical marks, and to render the child proficient in their interpretation or translation.

5. To train in the proper use of his vocabulary.

NOTE —To do this work well will require a year, three recitations daily. The 1st, 2d, 3d, and 5th points should be begun when the child enters school; the 4th about the middle of the first year.

Methods.—Teach by the word and phonic methods.

Preparatory.—The first thing to be done is to get the child to talk. When he is free from the embarrassments of his new surroundings, fix his attention upon some object or picture of the object and have the crayon say the word. The words put upon the board should be placed there by the teacher in

script letters as nearly perfect as possible. Train pupils to pronounce at sight, both the written and the printed forms. Allow no printing by the children. Teach, in this way, two or three common names. When they are learned well, the articles *a* and *the* should be prefixed; as, *a boy, a cat, a dog; the boy, the cat, the dog.* The pupils should be taught to pronounce these groups as one word, pronouncing "a-boy" as if it were a word of two syllables like "about." Next teach several adjectives; as. *a black dog, a white cat, etc.* In the same manner, teach a verb; as, *runs.* When the above words are learned thoroughly, a few short sentences should be taught; as, *the boy runs, the dog runs, the white cat runs, the black dog runs, etc.* Arrange these words into as many different sentences as possible. Continue in this way, until fifty or a hundred words have been taught. This will take from two to three months. The words should be taken from the reader or chart that the pupils are to use.

Encourage the child to be natural; to talk, not to do some new, strange thing. Train the pupil to see the entire short sentence and then to speak it. Never allow the pupil to drawl. Correct faulty reading not so much by mere imitation, as by leading the pupil to get a clear mental picture of what he reads, and to express his thought in an easy, conversational manner.

Seat Work.—To aid the pupil in naming words at sight, use sentence builders, cards containing the words written or printed on them. Let these be put together so as to form the easy sentences of the chart or lessons. As soon as a word or two can be recognized at sight, the pupil should be required to build the sentences, using separate words on bits of cardboard. Continue building sentences until the reader is taken up. The teacher should use his own judgment as to the amount of seat work and its nature. Every pupil should be kept busy at some profitable employment. Playing with sticks, marking with a pencil, or doing anything else with no definite aim in view, should not be permitted.

Reader.—As soon as the required number of words has been taught in this way, and read by the pupils from the chart or words made by the teacher on the board, the child should take the book. If he has been properly taught from the chart and board, he is now able to read several pages of the reader at sight. Do not allow pupils to read a lesson from the reader until they have mastered every word in that lesson by means of blackboard drill. Keep readers closed during blackboard drill. If necessary, take whole time of recitation to teach new words. It is well to complete the first half of two first readers before completing any entire first reader.

Phonics.—After a few days at school, begin to train the child to distinguish sounds and to observe that words are usually made up of two or more sounds. This can be done by pronouncing the word slowly and more slowly—that is, prolonging each sound until the word is separated into its elements. Train the child to do this until he can readily find and make the sounds in a known word. Do not hurry. Practice a little each day. Train the child to

recognize and to speak the word when the teacher gives the sounds, and to give the sounds when the word is pronounced. As the pupil advances and learns that a certain letter represents a certain sound, then tell him the name of the letter. This can be begun about the second week. At the end of four months the alphabet can be completely mastered.

Diacritics.—Continue to represent the sounds by marks. Indicate silent letters by a slanting line drawn through the letter. Teach marks in the order as found in the reader used.

SPELLING.

1. As soon as possible, the spelling should be partly done by writing the words.

2. The oral spelling should be both by letter and by sound.

3. Require all words of the first reader to be spelled by *letter* and all monosyllables by *sound.*

NOTE.—Two minutes a day of vigorous phonic drill is enough. Spell any familiar words not in reader.

WRITING.

Materials.—Ruled slates, long pencils, sheets of thin paper, and sheets of cardboard.

FIRST MONTH.

Procure cardboard and draw upon it oblique lines of the same slant as the written letter which they are to learn. Cut this cardboard into two-inch squares, so that each square will have on it several of the oblique lines. Give to each child a square of cardboard and a sheet of thin paper. Teach him to lay the paper over the square and retrace the lines, counting for each movement. Trace the lines from top to bottom and call them "slants".

Give to each child then a handful of toothpicks or splints and assist him to lay them in the same slant as the lines. Have this done repeatedly. Using slate and pencil, have each child draw a picture of the slants as they lie. Causing all papers, picks, splints, and cards to be put away; trace, in air the slant as it looks in the memory. Then have it attempted on the slate between ruled lines, teacher illustrating on the board and counting for them. See that the slants touch each line. Gradually increase the speed of movement. Have the children compare their slants with those on the cardboard.

SECOND MONTH.

Using cardboard and tracing paper again, teach vertical and horizontal lines, to train the eye to differences of position. Teach the joining of the vertical and horizontal, the slant and the horizontal, the slant and the vertical, dictating each in counting time. When these lines can be produced in moderate time, cut strips of cardboard and on them write repeatedly the right

curve. Call it the "*under-curve*", and have it retraced from the cards, traced in the air, and written between the ruled lines on slates, to regular counts. Combine it with the slant and count "under-curve, slant", gradually increasing the speed of the movement. Teach the left curve in the same way, calling it the "*over-curve*". Drill on this in combination with the slant and under-curve, calling the name of each in counting time.

THIRD MONTH.

Tell the children that you are now ready to make a real letter. Dictate "under, slant, under, dot", and you have the letter *i*. Watch that all lines touch both lines of the spacing. Dictate "under, slant, under, slant, under", for *u*. The same dictation with the little arm added makes *w*. Add the arm to the dictation for *i* and we have *v*.

Next include two ruled spaces on the slate and have slants and curves made two spaces high. Drill on slates and trace in air till freedom of movement with the lengthened lines is gained. Dictate "under two, slant two, under one, cross", for *t*. Teach the word *it* by dictation. Drill. Dictate and illustrate *s* as follows: "under, sharp point, curve back to under at base, under". It will be necessary to give them this from the board repeatedly and possibly to let them trace it from the cardboard. Dictate "it", "wit", "sit". Drill.

FOURTH MONTH.

Space the slates for three-space letters. Dictate slants and curves three spaces high. Teach the loop as "under three spaces up, slant three spaces down", and teach the children that we call this a loop. Dictate "loop, under one", for *l*. "Loop, under one, little arm", for *b*. "Loop, over, slant, under", for *h*. "Loop, over, little head, slant, under", for *k*. This will be hard and should be traced first. "Loop up three, loop down two spaces, under one", for *f*. Teach this carefully from the blackboard. Dictate "loop, under, slant, under, downward loop", for *y*. "Under, downward loop, dot", for *j*. Dictate an *s* and then add the downward loop for *z*.

FIFTH MONTH.

Dictate "over, slant, over, slant, under", for *n*. "Over, slant, over, slant, over, slant, under", for *m*. "Over, slant, under, cross", for *x*. The dictation for *p* is difficult. Illustrate freely. "Under, up two, slant three and one-half down, retrace the slant to base line, over, slant, under", for *p*. Practice on "mist", "mill", "nut", "pin", "lily", "fully", etc.

SIXTH MONTH.

Up to this point the children have made the left curve in one direction only, from the base line up. Show them that we sometimes write it the other way and we then dictate it as a "backward over". Dictate "over, backward over nearly retracing the first, under, slant, under", for *a*. Show that the connecting lines from other letters to *a* are usually "long overs". Drill on "mat" and "man". Show that *d* is an "over, backward over, under up two, slant two to

base line, under one". Call attention to the fact that the "under up two" closes the end of the "over" and that the "slant" retraces two-thirds the length of the "under". Dictate "over, backward over, under to close the over, downward loop two spaces below base line", for *g*. It will be necessary to form *q* so the children will see that it is not a loop letter, then dictate "over, backward over, under, slant down two spaces, slant up to base line", for *q*. Dictate "till", "sill", "quill", "slim", "hit", "bit", "quit", "gay", "gain", "gin", etc., and show that in some of the words the second "over" is backward, and that the connecting lines to *a*, *d*, *g*, and *q* are "long overs".

SEVENTH MONTH.

Dictate "long over, backward over, under, little arm", for *o*. For *e*, "under, little loop, under"; *r* is hard to dictate and must be formed while the children observe and count for you. Dictate "under, sharp point, outward turn of pencil, slant to base line, under". Retrace if they have trouble with it. Dictate "long over, backward over, under", for *c* and show how the "overs" form the point. Compare slant and spacing continually with the cardboard copies. Dictate words, have them analyzed, and reproduced constantly, leading from familiar forms to similar new forms. Cultivate an easy and correct position of pencil by air tracing with pen properly held. Give muscular exercises for the fingers and arm to develop easy, rapid movement. Count for each exercise and insist on prompt movement.

LANGUAGE.

All language work for the first two years should be done in connection with the reading.

Encourage the Children to Talk.—Lead them to make grammatical sentences about familiar objects. Correct common errors in their speech. Tell them good stories in which real, human actions are described, and require them to repeat them to you, first in answer to questions upon the incidents, and later in comprehensive form.

Teach the use of capitals in the following cases: Beginning of sentences, proper names, and the word *I*. Teach the uses of the period and interrogation point at the close of sentences.

REMEMBER.—1. To have all written work done neatly.

2. To vary the work with each lesson.

3. To point out specifically what the pupil is to do at his seat in the matter of preparation and writing.

4. To give short lessons and see that they are prepared as directed.

5. The recitations in this division should be frequent, short, and spirited.

6. To train the eye.—This is the most important of the senses, both in learning to read and in number work. Unless one is quick to recognize words, groups of words, and groups of objects, he cannot become a good reader, or ready in numbers.

To secure this, practice exercises like the following: Require the words at the head or

close of the lesson to be pronounced rapidly at sight, both by column and line, before commencing the reading lesson proper.

7. By a series of easy questions, lead the child to express the thought naturally, and require him to answer such questions as the following: Who did this? What is said of ——?

NUMBER—ORAL WORK.

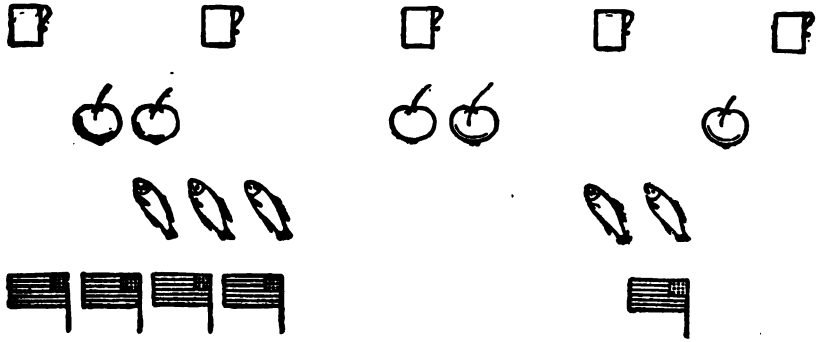
Limit.—Determine first what pupils know. Combinations and separations of numbers from one to ten.

Methods.—Use objects—corn, beans, shoe pegs, buttons, etc., as counters. Use pictures and count objects represented. Use slate for drawing lines, making dots, triangles, squares, circles, flags, etc., to represent number, combinations of number, and the separations of number. Teach the child many ways of picturing number, and train him to tell number stories (little problems) about his pictures. Write sentences containing numbers and words. Write sentences leaving blanks to be filled by pupils. Break or cut objects to give clear ideas of fractions. Also draw circle and divide it into halves, thirds, and fourths. Show that one-half equals two-fourths, etc. Do a little every day. Teach children to spell and to write words representing number. Many fine exercises can be made by using splints or sticks of different colors and lengths, to make diagrams. Afterwards teach the child to draw these diagrams on the slate. Do not begin the use of figures until the idea of the number and its oral sign are thoroughly learned.

Grouping.—In teaching each number, give particular attention to the grouping of objects. The child should be taught to measure each number by all numbers within its limits. For example, if the lesson be on five, let him arrange the five objects, first as one number, thus: I I I I I. Next in twos, threes, fours and fives.

NOTE.—In exercises in MEASURING numbers, it will be found that the number TWO is the most convenient measure to give the child a knowled e of the SIZE of the number measured; therefore special stress should be laid upon the measurement of all numbers by 2.

Let him make these groups on the slate for busy work thus:



He should be led to tell what he sees in these groups, as: "There are two 2's and 1 more in 5." "2 and 2 and 1 are 5." "5 less 2 less 2 leaves 1." "2

can be taken 2 times from 5 and 1 will remain." Give constant attention to language.

In counting by twos, threes, fours, and fives, the eye should be trained to recognize, promptly, groups consisting of two, three, or four things. Attempt to recognize no group as a whole, composed of more than four units.

When a number is used that enters into the table of compound numbers, apply it as in practice. Thus the number 2 is found in dry measure. Then you get "2 pints make 1 quart, and $\frac{1}{2}$ of a quart is 1 pint." Teach the children to make *neat figures.*

Counting by 2's.—Develop the idea of building (multiplying) numbers by counting a certain number of objects by 2's, while the pupil observes how many 2's or *how many times* 2 were required to build the given number When the pupil fully understands this operation, the process may be reversed and the number be resolved (divided) by taking away 2's. Explain the *word signs* × and ÷. Let the pupil make the following tables on his slate or at the board, and recite concrete problems based upon them, and afterward the tables abstractly, using mathematical language:

ADDITION.	SUBTRACTION.	MULTIPLICATION.
$5 + 2 = 7$	$5 - 2 = 3$	$5 \times 2 = 10$
$1 + 2 = 3$	$2 - 1 = 1$	$1 \times 2 = 2$
$3 + 2 = 5$	$3 - 2 = 1$	$3 \times 2 = 6$
etc.	etc.	etc.
DIVISION, 1st form.	DIVISION, 2d form.	EQUAL PARTS.
$10 \div 2 = 5$	$\frac{10}{2} = 5$	$\frac{1}{2}$ of $10 = 5$
$2 \div 2 = 1$	$\frac{2}{2} = 1$	$\frac{1}{2}$ of $2 = 1$
$4 \div 2 = 2$	$\frac{6}{2} = 3$	$\frac{1}{2}$ of $6 = 3$
etc.	etc.	etc.

Teach one thing at a time; make haste slowly; be thorough everywhere. Never come before your class without a clear notion concerning the matter of the lesson and the manner of presenting it. A part of each recitation should be used in teaching rapid combinations.

PHYSIOLOGY—ORAL WORK.

Make the work very simple.

How to Eat.—Chew food well. Do not eat or drink too much. Eat slowly. Food and drink should not be too cold or too hot; as, hot tea or coffee, ice cream, ice water. Avoid green fruit. Do not eat too often.

Cleanliness.—Teach cleanliness in dress and person. Do not sit or lie on damp ground. Keep feet warm and dry.

Exercise.—Sit, stand, and walk erect. Exercise, not too long or too violent, as jumping rope, running, etc. After severe play, avoid sitting down in the open air or in a draft to rest. Necessity for extra clothing when exposed to cold.

SECOND YEAR.

TEXT-BOOK—Second Reader.
READING—Second reader or readers.
SPELLING—From readers and familiar words.
WRITING—Forms of capital letters.
LANGUAGE—See suggestions.
NUMBERS—Combinations from 10 to 20; in special work to 100.
PHYSIOLOGY AND HYGIENE.—Oral work.
DRAWING—See "Form Study and Drawing."

READING.

Purposes.—1. To gather thought from the printed page. 2. Expression.

Teach the new words at the head of each lesson so that pupils will know them at sight, pronounce them correctly, and know what they mean. Be careful to secure correct pronunciation and distinct articulation. To teach pupils to know words at sight, point rapidly from one word to another. To teach the meaning of words, require pupils to give the words in sentences, after they have been fully explained. Sentences to be both oral and written. To secure correct pronunciation, the teacher must be careful about his own pronunciation. Three recitations daily.

Choice Selections.—Pupils should be required to commit to memory short, choice selections to be recited before the class. These selections may be taken from the reader or from any source not more difficult than the reader, and should be thoroughly understood before they are committed.

Supplementary Reading.—There is no place in the school course where supplementary reading can be made more profitable. It should be, generally, *sight reading* of interesting stories, very easy second grade or hard first grade work. Let one pupil read a portion and others listen, and then have the story told by them. This insures attention and inspires those who read to read well.

Expression.—Give additional attention to errors of pronunciation and to good expression. Aim at naturalness. Do not read very much for pupils to imitate. The skillful teacher succeeds in filling the pupils so full of the sentiment of the story, that expression is spontaneous. Do not teach that the voice should fall at a period and be kept up at a comma. It is not true.

NOTE.—Do not keep a class too long on one lesson. It is better to review it after a time than to read that in which the pupil has lost interest. Assign the lesson so that each pupil will know exactly what he is to do in preparing it. If necessary, prepare the lesson with the class. Occasionally read selections from other books to the class on the subject of the lesson. At the close of each lesson require one or more members of the class to reproduce the story from memory. Occasionally, the latter part of the year, have pupils write the story of the lesson from memory. Place upon the board questions on the lesson to which pupils shall write complete answers. Rapidly review lessons passed over.

Phonics.—Separation of words into elementary sounds, and making words from elementary sounds, using diacritical marks, as in reader.

SPELLING.

1. The principal work this year, is the learning of the new words (usually found at the head of the lesson) in the second reader. Teach pupils to pronounce these rapidly and correctly, at sight, before reading.

2. The language work for this year will give all the additional words needed.

3. Attention must be given to the division of words into syllables as found in the reader; also to marking the accented syllable. The syllable is the unit of pronunciation, and good pronunciation cannot be secured without a careful drill on syllables. Take a word like "un-der-stand." Which is the first syllable? How is it pronounced? Spell it by sound. Pronounce the second syllable; the third; how many sounds in the third syllable? Give them.

4. All abbreviations and diacritical marks used in the book. Read the *note* in first year's work.

5. Occasionally require pupils to bring to the recitation a small portion of the lesson, neatly and correctly written on their slates. Be sure to examine this, and if wrong, hand it back for correction.

Dictation.—Occasionally dictate sentences and paragraphs from the reading lessons, to be reproduced on slate or paper by the pupil.

WRITING.

Materials.—Lead pencil or pen, ruled paper.

FIRST MONTH.

Give drills on all small letters ending with loop three spaces high. Then give the oval as a drill exercise, seeing that it occupies the whole space, counting one, two, three. For the capital *O* the familiar "backward over, under, backward over one," may be dictated first. Then change to the counts one, two, three.

SECOND MONTH.

Capital *U*. Dictate "over three, slant three, under three, slant three, under one." In like manner teach *Q*, *W*, *M*, *N*, *Y*, *X*, *Z*. Count for each stroke.

THIRD MONTH.

Teach the capital stem. Trace in air first, counting one, two, capital fold time. Modify to form *T*, *F*, *L*, *H*, *D*, *R*, *B*, *A*, *K*.

FOURTH MONTH.

Teach *I*, *J*, *G*, *C*, *E*, counting for each stroke, and illustrating from board. For the remainder of the year, drill on form and spacing, striving to gain rapidity of movement.

LANGUAGE.

Conversational Lessons.—Conversational lessons about stories in readers. Reproduction of stories. Teach the singular and plural forms of

nouns; correct use of *a* and *an*, *is* and *are*, *was* and *were*, *has* and *have*, *seen* and *saw*, etc., in sentences. Continued careful practice in the use of capitals and terminal marks. Teach use of capitals in names of days of the week and months of the year, and further as found in the reader. It is well to use good language tablets.

Homonyms.—Teach the correct use and orthography of such words as *blue, blew; two, to, too; here, hear; no, know; be, bee; there, their; see, sea; new, knew; right, write; by, buy; ate, eight; led, lead; whole, hole.*

Write answers to questions on what is seen in a picture.

Write full answers to direct questions; as, "Did he stand in the door?" The pupil will write: "He stood in the door." In writing answers to such questions, the pupil must change the initial letter, the form of the verb, and the terminal mark.

Insert nouns in place of pronouns, in reading lessons, both orally and in writing.

NUMBER.

The teacher will continue the table work and exercises with the nine digits, as indicated for the first year with 2's.

Read and write numbers to 100.

Roman notation to L. Coins of United States money. How to make change below 50 cents. Use real money.

By close of this year the pupil should be well acquainted with tables as indicated in the following: All of United States money; number of pints in a quart, and quarts in a gallon; all of dry measure; things in a dozen; inches in a foot, feet in a yard, inches in a yard; hours in a day, days in a week, days in a month, months in a year, weeks in a year. Teach these facts as the numbers representing them are reached.

Teach the fractional parts growing out of these; as, what part of a bushel is 1 peck? 3 pecks? etc.

Count forward and backward by 2's and 5's to 50, and by 10's to 100, beginning with each number from 1 to 9. Teach differences between 10 and 30, 10 and 40, etc., to 100, until the differences are firmly fixed.

Applications.—From expressions like the following, let the pupil prepare on slate or paper, practical problems, thus:

$6+$4=$10.

PROBLEM.—*I paid $4 for a ton of coal and $6 for a cord of wood. What did I pay for both?*

40 gal.—10 gal.=?

PROBLEM.—*From a barrel containing 40 gal., 10 gal. were drawn. How many gallons remained?*

With the work in number which the children do with counters, they should be required to commit to memory the combinations which they make.

The forty-five combinations in addition should be thoroughly committed to memory. The forty-five primary problems in addition are as follows:

1	2	3	2	4	3	5	4	3	6	5	4	7	6	5
1	1	1	2	1	2	1	2	3	1	2	3	1	2	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4	8	7	6	5	9	8	7	6	5	9	8	7	6	3
4	1	2	3	4	1	2	3	4	5	2	3	4	5	9
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	7	6	9	8	7	9	8	7	9	7	9	8	9	9
4	5	6	4	5	6	5	6	7	6	8	7	8	8	9
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Express numbers below 50 in Roman numerals, thus: 37=XXXVII. 47 =XLVII.

Tabulated Work.—Tabulated work like the following will give useful employment to the pupils:

Number of pints in 1, 2, 3, 4, 5, 6, 7, 8, and 9 quarts.

1 quart = 2 pints.	1 gallon = 4 quarts.
2 quarts = 4 pints.	2 gallons = 8 quarts.
3 quarts = 6 pints.	½ gallon = 2 quarts.
½ quart = 1 pint.	¼ gallon = 1 quart.

Let pupils prepare work similar to the following:

1 bushel = 4 pecks.	1 peck = 8 quarts.
2 bushels = 8 pecks.	2 pecks = 16 quarts.

In adding, subtracting, multiplying, and dividing, the pupils should be trained to name results only, and to do it rapidly. Give examples in making change with amounts not exceeding one dollar.

PHYSIOLOGY AND HYGIENE—ORAL WORK.

Parts of Body.—Learn parts of body; as, skin, flesh, and bones. Teach necessity of keeping bones in proper position. Necessity of general bathing. Composition of flesh; as, lean and fat; use of each. How life is sustained in hibernation.

Food.—Simple explanation of necessity for food and drink. Drink but little while eating.

Tobacco.—Tobacco not a food. Use of tobacco a filthy habit. Cigarettes made of what?

Care of Body.—Care of hair, nails, hands, face, etc. Cultivate graceful movements.

Care of Teeth.—Keep clean. Avoid cracking nuts with teeth. Do not use metallic toothpicks.

THIRD YEAR.

TEXT-BOOKS—Third Reader, Language Book, Elementary Arithmetic.
READING—Third reader.
SPELLING—Words from readers and from other lessons.
WRITING—Forms of letters and movement exercises.
LANGUAGE—More distinctive work than preceding years.
ARITHMETIC—Elementary arithmetic begun.
PHYSIOLOGY AND HYGIENE—Oral work.
DRAWING—See "Form Study and Drawing."

READING.

Objects.—1. To complete about sixty per cent of the third reader.

2. To continue the drill in ready recognition of words and phrases.

3. To teach the pupil to gather thought from the printed page and to use the book as a source of information and pleasure.

Suggestions.—Give particular attention to distinct articulation, correct pronunciation, and the diacritical marks. Secure compass and volume of voice, with pleasant tones. Train the pupil to express the thoughts of the author in language entirely his own. Question carefully on the lesson to provoke thought on the part of the pupil.

The objects aimed at are: (1). Mastery of the thought; its truth, beauty, and purpose. The mind must dwell upon the thought until its force is understood and felt. (2). A clear, natural expression of the thought. Rules for inflection, emphasis, modulation, etc., may assist to some extent, but they are chiefly valuable when accompanied by drill exercises. They should only be used occasionally.

SPELLING—Third and Fourth Years.

In Connection with the Third Reader.—1. If no spelling book is used with third reader, note the work of the second reader for suggestions, and advance the work as below.

2. Note that most third readers have the new and more difficult words of each lesson arranged with syllabication, accents, and diacriticals for oral spelling, either by the alphabet or phonic method.

3. Dictation should be given by the teacher to give an enlarged meaning to the words used—thus, for the word *glade*, the teacher will dictate—"The opening in the wood was without trees—a pretty *glade*."

4. Word analysis of simple English derivatives should be begun; as, *er* = one who, or that which—skat-*er*, skater=one who skates. The final *e* of skate is dropped "before a suffix beginning with a vowel."

5. In the same way teach some of the prefixes; as, *un*=not, etc. One lesson a week of this kind will give a good start in word analysis.

6. Geographical names, and names of distinguished persons, as they occur in the readers, should be arranged in lists for spelling and pronouncing exercises.

In Connection with the Spelling Book.—1. If a spelling book is used, follow it and *master* it.

2. Require each lesson to be pronounced promptly by the class with open book, before it is recited.

3. Keep up frequent reviews of these pronouncing exercises, and on Friday, pronounce in review, all the lessons of the week.

4. Require the words in *some* lessons to be arranged alphabetically; by number of syllables; by accent.

5. Monosyllables may be arranged by vowel sounds, and the proper mark affixed.

6. Keep up a practice on syllables, as indicated in former grade. Remember the *syllable* is the unit of pronunciation.

WRITING.

Pupils have now had instruction in, and opportunity to become familiar with the form and spacing of the various letters. It is now practical that they receive instruction in exercises calculated to develop a rapid, legible hand. The best exercise for the beginner is probably the *m*. It consists of an indefinite number of alternate left curves and straight lines, ending in a right curve. This exercise should be made with the fore-arm movement; should be one space high; should be without shade—like parts parallel; should be made in the time "one, two; one, two"; as fast as the words can be distinctly spoken. The count, "one", is for the left curve, the "two" is for the straight line. This exercise should be the copy for at least a week, practicing twenty minutes per day each day in the week.

The second week, the exercise may be shortened to three alternate left curves and straight lines, ending in a right curve. The time for this should be "one, two, three, four, five." It will be observed that the first curve, the straight lines and the last curves only are counted. The counts should be made as fast as the words can be spoken. This copy may be shortened again to two alternate left curves, two straight lines, ending with a right curve, and later to one left curve, straight line and right curve. Three letters will now have been formed legibly.

The third week the *u* exercise consisting of alternate right curves and straight lines united, may be introduced. The same care as to counting for speed, spacing, etc., as in the *m* exercise, should be observed. Contract as in *m* exercise, and the fourth letter has been rapidly and legibly made.

Take for the fourth week the word "mum." This should be legibly written twenty consecutive times, in a count of ten for each time, the count to be

made as rapidly as the words can be distinctly spoken. This group should be written as often as practicable.

The fifth week the *o* exercise, figure 1, should be taken up.

FIGURE 1.

As shown by the cut, it consists of a number of *o's* joined by a straight horizontal line, and should be made in the time of "one, two", counted as rapidly as clearness of enunciation will permit, count "one" being for the *o* and "two" for the straight line. This exercise should consist of not more than ten *o's* joined. The letters being uniform in height and spacing.

In this way, exercises involving the different small letters should be taken up and continued as a practice lesson until executed on time and legibly. The first six months of the year should be devoted to this work. Review at each lesson, if possible, all the forms had during the year.

A variety of exercises should now be brought into use. (For teachers not provided with forms, Michaels' Compendium of Rapid Writing, to be obtained at Delaware, Ohio, is suggested as a most excellent work.) For instance, the small *o* exercise, figure 2, will prove beneficial.

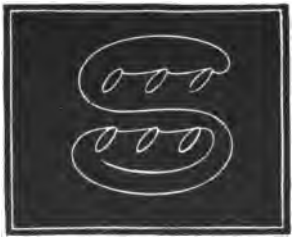


FIGURE 2.

Next the Extended Loop exercises and the letters involved should receive attention. Figure 3 will serve for illustration.

FIGURE 3.

When the various exercises can be executed with a fair degree of accuracy, practice on groups of like letters, should be the rule. Figure 4 will illustrate this point.

FIGURE 4.

It will be wise at this time, about the seventh month, to introduce capital exercises. To give an idea as to the speed with which they should be written, the following copy is given as a first exercise. This form we will call a Capital Fold. Figure 5.

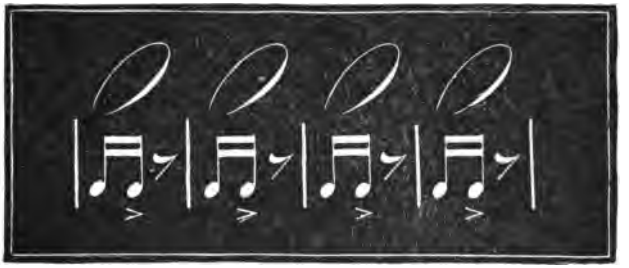


FIGURE 5.

In this exercise, the teacher should count in the indicated time. Indeed this time prevails throughout the Capital Exercises as well as in the execution of the letters themselves. This exercise should be followed by figure 6, the Capital Fold exercise.

FIGURE 6.

This should be practiced for about one week. The next exercise may very appropriately be the Capital Stem, figure 7.

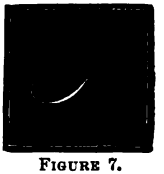


FIGURE 7.

This should be made in Capital Fold time.

LANGUAGE.

NOTE.—Give short lessons. Have frequent, thorough drills upon each topic. Consult language book for exercises and examples.

FIRST MONTH.

Nouns.—Lead pupils to understand fully the definition of a noun. Present objects, and have pupils name them. Write these names. Require pupils to write names of single objects, and change them to plural forms. Rule for forming plurals of most nouns.

SECOND MONTH.

Idea of the Sentence.—Develop the idea of a sentence. A sentence tells or states something. Have pupils say something (make statements) about a dog, a cat, a boy, etc. These statements are sentences. The words which tell something about these nouns are called *verbs*. Drill first upon sentences, using singular nouns; then change these to sentences having nouns meaning more than one. Notice the changes in the forms of the verb. A sentence should begin with a capital letter and generally end with a period.

THIRD MONTH.

Drill.—Drill pupils upon filling blanks in sentences. Require them to point out and copy from readers:

1. The sentences which tell something about *one* thing.
2. The sentences which tell something about more than one thing.

Different Kinds of Sentences.—As to use:

1. Declarative (telling) sentence.
2. Interrogative (asking) sentence.
3. Imperative (commanding) sentence.
4. Exclamatory (exclaiming) sentence.

Give drills upon each class of sentences, until pupils can readily distinguish them. Make pupils thoroughly familiar with one kind before considering the next. Note capitals and terminal marks.

FOURTH MONTH.

Continue drills upon use of *is* and *are*, *was* and *were*, *has* and *have*.

NOTE.—The use of these words in sentences is suggested in the preceding year, but the "why" should now be considered.

Use of *this*, *that*, *these*, and *those* in sentences.

Rule.—Nouns ending in *s*, *z*, *sh*, *ch*, or *x*, form their plurals by adding *es* to the singular.

Make list of words under above rule, and use them in sentences.

Make lists of words whose plurals are formed by changing one or more letters of the singular form; as, man—men, mouse—mice, etc. Use these in sentences. What nouns have no singular form?

FIFTH MONTH.

Abbreviations.—Give exercises upon the uses of initial letters and abbreviations. Nouns are "proper" or "common." Train pupils to distinguish

between these two classes. Make lists of each from readers. Develop definitions. Names of particular persons, places, days of the week, months, and titles are proper nouns, and should always begin with capitals. Avoid improper use of capitals; e. g., names of seasons, points of compass, etc.

SIXTH MONTH.

Combining Statements.—Give exercises in combining several short sentences into one. The sentences, "John goes to school," "Jane goes to school," "Mary goes to school," may be changed to "John, Jane, and Mary go to school." Here is introduced one use of the comma. Notice the change in the form of the verb. Require pupils to point out combined statements in readers. Let these combined statements be divided into separate statements.

Train children in the use of oral language. Let them give descriptions of what they have seen. Let them relate what occurs in their presence. Let them describe movements of the body, actions of the hand, foot, and eye. Train them to use in sentences, oral and written, the new words learned in the reader.

SEVENTH MONTH.

Homonyms.—Correct use and spelling of such words as *the, thee; him, hymn; furs, firs; flour, flower; threw, through; died, dyed; buy, by; cells, sells; sent, cent, scent; pray, prey; sees, seize; sun, son; in, inn.*

Stories.—Read short, interesting stories, and require pupils to reproduce them in their own language, orally and in writing. Give careful attention to the spelling, punctuation, use of capitals, and correct use of words.

EIGHTH MONTH.

Possessive Form.—Introduce the possessive form of nouns. Develop idea of ownership, use of apostrophe, and the rules. Use of quotation marks. Require pupils to point out quotations in the reader and repeat or copy the quoted words.

Rule.—When the exact words of a person are quoted by another, they should be enclosed by quotation marks. Review.

ARITHMETIC.

FIRST MONTH.

Representation of numbers to 50 by words, by figures, and by Roman characters. Use splints separately and in bundles of ten to show ones and tens.

SECOND MONTH.

Study numbers to 50 by picturing the problems, and by separating into equal groups. Show parts of numbers, as $\frac{1}{2}$ of 20 is 10, etc. Teach division and multiplication as far as 50. Apply to practical questions. Use terms, sum, difference, etc.

THIRD MONTH.

Teach halves, thirds, and fourths, comparing them. Use objects, drawings, and fold papers, to give clear ideas; then represent by figures in the usual way. In same way halves, thirds, and sixths. Give many little problems. Use arithmetical terms properly, as occasion arises.

FOURTH MONTH.

Teach writing numbers to 100. Use splints to illustrate the grouping into

tens and hundreds. Teach addition and subtraction of numbers below ten. Make all combinations and separations. Name results only. Drill for rapidity and accuracy.

FIFTH MONTH.

Write numbers to 500. Teach place, or order. Drill in adding by columns. Children should not be allowed to count fingers in adding, nor tap on the slate or board, nor follow any devices which allow of adding by ones only. They should know the result when any two numbers are to be added. Learn the multiplication tables of 2's, 3's, and 4's.

SIXTH MONTH.

Teach measuring, length, inch, foot, and yard. Have pupils actually do the measuring. Change yards to feet, feet to inches, and the reverse. Teach fractions of yard and foot, comparing halves, fourths, thirds, and sixths. Make and solve many problems in addition and multiplication.

SEVENTH MONTH.

Teach United States money; teach reading of dollars and cents; writing the same. Make many problems. Keep up the drill in addition and subtraction of numbers.

EIGHTH MONTH.

Review all, and give practice in reading and writing numbers to 1,000. Drill in multiplication and division as far as through the 5's.

PHYSIOLOGY—ORAL WORK.

FIRST MONTH.

Teach the five senses and their uses.

SECOND MONTH.

Voluntary and involuntary muscles. Habits and thoughts are shown in the face.

THIRD MONTH.

Muscle is what? Have children examine muscle of beef, pork, chicken, etc. Show how the body is moved by muscles. Tendons, ligaments, cartilage. Have pupils examine.

FOURTH MONTH.

Different kinds of joints. Have pupils examine. Explain.

FIFTH MONTH.

Necessity for bones as framework of body. Teach how to breathe; always with mouth closed, especially in cold weather.

SIXTH MONTH.

Simple explanation of digestion. Explain how blood carries nutriment to all parts of body.

SEVENTH MONTH.

Heart forces blood to all parts of body. Trace course of blood through body. Uses of arteries, capillaries, and veins. Explain difference between arteries and veins. How distinguish between flow of venous and arterial blood. How to apply bandages to stop bleeding.

EIGHTH MONTH.

Explain structure of heart. Commit short poems containing moral lessons in regard to use of alcohol and tobacco.

FOURTH YEAR.

TEXT-BOOKS—Third Reader, Language, Elementary Arithmetic.
READING—Third reader completed.
SPELLING—See previous year.
WRITING.—Drill on words, sentences, and paragraphs.
LANGUAGE—Parts of speech, composition, and punctuation.
ARITHMETIC—Fundamental operations. Factoring below 100.
PHYSIOLOGY AND HYGIENE.—Oral work.
GEOGRAPHY.—Oral geography.
DRAWING—See "Form Study and Drawing."

READING.

Third reader finished and reviewed. The general observations made in the previous year apply here. The lessons should be short and thoroughly mastered. Reviews should be frequent. Accent, emphasis, and inflection are prominent topics in this grade. The pupil should be encouraged to obtain a dictionary. From six to ten words should be selected for each recitation, looked up, the diacritical marks, and pronunciation learned. Learn meaning of words from their use in sentences in the text. Primitive and also derivative words should be selected. Memory gems should be learned. The class should write out the leading thoughts of a selection. The teacher should use care in these exercises.

WRITING.

The exercises of the third year should be continued as a review for three months, then groups of words followed by short sentences, and finally in the seventh month by short paragraphs, dictated. The utmost care should be taken to maintain speed and legibility in the exercises, words, and sentences.

LANGUAGE.

FIRST MONTH.

Composition.—Short compositions upon familiar subjects. These should be preceded by oral conversation. Occasional exercises in writing dates and addresses.

Comma.—Second rule. The names of persons addressed should be separated from the rest of the sentence by commas.

SECOND MONTH.

Forms of the Verb.—Present, past, complete. Drill on verbs in common use. Use of *has*, *have*, and *had*. Many sentences and much careful drill needed here. Give special drill upon forms of *lie* (to rest or recline), *lay*

(to place or put), *sit* (rest), *set* (place or put), *rise* and *raise*, *teach* and *learn*. Use of apostrophe in contractions.

THIRD MONTH.

Elements.—The sentence contains subject and predicate, sometimes an object. Exercises in pointing out the elements in easy sentences.

Adjectives.—Define. Use them in sentences. Require pupils to point them out in readers. Forms of comparison.

FOURTH MONTH.

Position of *and* in sentences containing a series of words. Use of comma.

Pronouns.—Teach all the forms of *I*, *you*, *he*, *she*, and *it*. Use these in sentences: (1) as subjects, (2) as objects, (3) possessive forms, (4) after relation words. Uses of *who*, *which*, *that*, and *what*. Teach uses of *each*, *every*, *either*, and *neither*, in sentences.

FIFTH MONTH.

Adverbs.—Uses of words which show *how*, *when*, or *where* in sentences. Distinguish between adjectives and adverbs, both as to form and use.

Punctuation Marks.—Continue drill on uses of period, comma, interrogation and exclamation points, apostrophe, and quotation marks. Teach forms and meaning of abbreviations in common use.

SIXTH MONTH.

Prepositions (relation words).—Use of such words as *in*, *into*, *on*, *by*, *under*, *over*, *behind*, *before*, *below*, etc.

For occasional review let pupils take the reading lesson and make a list of words as follows: (1) The names, (2) words used instead of names, (3) quality words, (4) relation words, (5) words that show *how*, *when*, or *where*, (6) action words that state something, (7) action words that name or describe (participles).

SEVENTH MONTH.

Drills.—Give occasional drills upon the correct use of such words as *guess*, *expect*, *suspect*; *can*, *may*; *ought*, *better*; *nice*, *splendid*; *awful*, *dreadful*; *shall*, *will*; *like*, *love*; *stop*, *stay*; *saw*, *seen*; *did*, *done*; etc. Require pupils to write short compositions from outlines prepared by the teacher.

EIGHTH MONTH.

Letter Writing.—Give occasional exercises in letter writing, giving attention to the parts of the letter: (1) The heading, (2) the address, (3) the body, (4) the subscription, (5) the superscription. Careful attention should be given to penmanship, neatness, capitals, punctuation, margins, and indentation.

Continue work in dictation exercises, and oral and written composition. Review.

ARITHMETIC.

FIRST MONTH.

Teach numbers from 50 to 100 by partition and division. Teach table of 6's. Make problems containing parts of numbers. Use weights and meas-

ures for illustration. Teach thirds, fifths, and fifteenths. Read and write numbers of four places.

SECOND MONTH.

Teach time measure. Use clock or watch. Learn table. Make many problems. Continue practice in adding columns of numbers containing three places.

THIRD MONTH.

Teach the 7's, 8's and 9's as far as 9×9. Teach division by 7, 8, and 9. Compare fourths and fifths. Draw figures and show that $\frac{1}{4}=\frac{2}{8}$, and $\frac{2}{4}=\frac{4}{8}$, etc. Same for $\frac{1}{2}=\frac{4}{8}$. $\frac{1}{3}=\frac{2}{6}$. Same for fourths and eighths; fourths, fifths, and twentieths.

FOURTH MONTH.

Teach the square. Definition of square inch, square foot, etc. Show how to draw a square. Draw squares having sides one inch long, one foot, one yard, etc. Draw rows of squares. Find how many rows of square inches can be drawn in a square foot. Let pupils cut a square inch from cardboard and use it as a measure of small surfaces. Of square feet in a square yard, etc. Never allow a child to call a square foot a foot. A foot, means length, a square foot means surface. Fix in the mind clearly the difference in these units. Drill in addition and subtraction of numbers of four places.

FIFTH MONTH.

Teach form of merchants' bills. Buy common articles and compute cost. Teach tables of 10's and 11's. Multiplication and division. The whole multiplication table should be thoroughly mastered. Too much practice can hardly be given now. When two numbers less than 10 are spoken or seen, the sum, difference, or product should present itself instantly to the child's mind.

SIXTH MONTH.

Teach the cube. Define. Have pupils cut a cubic inch from wood, potato, or other substance. Use to measure small solids, as chalk box, etc. Teach cubic foot, cubic yard, and cubic measure. Show difference between the linear foot, square foot, and cubic foot. Give many little problems in measurements to fix these units clearly. Read and write numbers containing two periods. Teach the complete Roman notation.

SEVENTH MONTH.

Teach multiplying and dividing by 2, 3, 4, 5, and 6, in the common written form. Teach integer, factor, composite number, even and odd numbers.

EIGHTH MONTH.

Teach multiplying by 7, 8, and 9. Teach division by same. Drill in adding numbers having six places. Cause pupils to discover and learn all the prime numbers below 100. Teach factoring and the expression of the factors of numbers less than 100.

PHYSIOLOGY AND HYGIENE—ORAL WORK.

FIRST MONTH.

Eyes, care of. Avoid reading, (1) too fine print; (2) in poor light; (3) with book too close to face; (4) with lamp in front of face; (5) lying down. Do not rub the eyes. Simple explanation of structure of eye.

SECOND MONTH.

Ears, care of. Injured by striking or pulling. Clean with soft cloth and water. Never insert hard substance for removing wax or cleaning. Call attention to unfortunates who are deprived of the use of eyes and ears. Teach duty of assisting unfortunates. Uses of taste and smell.

THIRD MONTH.

Scientific names of principal bones.

FOURTH MONTH.

Continue scientific names of bones. Teach how blood is purified in lungs.

FIFTH MONTH.

General outline of nervous system. Effects of alcohol and tobacco on nervous system. Necessity for early retiring.

SIXTH MONTH.

Trace course of food from stomach to blood, naming the more important organs and fluids in the course.

SEVENTH MONTH.

Review digestion, going more into detail, naming and describing the different organs. Care of digestive organs.

EIGHTH MONTH.

Review work of the year.

ORAL GEOGRAPHY.

Objects.—The objects are to enable the pupil to make and read a map; to give primary ideas concerning the earth, and to know what the study of geography really is.

The plan is to teach time, direction, distance, art of measuring, use of definite scale; to draw maps, study climate, vegetation, animals, minerals, occupations, local exports, imports, and government of home and neighborhood.

REMARKS.—In giving oral instruction we should bear in mind that the child acquires a real knowledge of things through his own observation. Keep in mind, then, that elementary instruction is upon real objects, and that your inquiries must appeal to the senses of the pupil for answers. Wherever practicable bring the object before the class. If not so, try to get pictures for your illustrations.

Interest the Pupil.—Endeavor to arouse the pupil's curiosity and cultivate his imagination by the use of pictures and by oral descriptions. Find pictures of a hill; talk of its foot, top (summit), sides, slopes, etc.; speak of top covered with snow, very high. Secure definition of a hill and a mountain. Work up, in the same way, the name and definition of each of the natural divisions. Teach the symbol for each as its name is learned.

FIRST MONTH.

The Idea of Time.—Days are long in summer and short in winter. Winter evenings long, summer short. Day and night together, a natural day, or twenty-four hours. The civil day begins and closes at midnight. Number

of hours in a school day. Number of times the clock strikes. When school opened, to-day. When it will close. Class be silent a minute. Length of class exercise. Time to walk home. Minutes in an hour. Seconds in a minute, etc. Use of hands of clock, and how to tell the time. Names of days of week; the first and last days; number of weeks in the month; since school began; in a year; from birthday to birthday; from Christmas to Christmas. Months in a year. Time table learned.

SECOND MONTH.

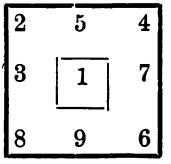
The Idea of Place and Direction.—The terms right, left, front, back. Point in these directions. Name numerous objects in these directions. Teacher name objects and class locate. One pupil names objects to be located by the class, and *vice versa*. Point to top, bottom, right side, left side, and center of a map. Extend to location of familiar objects in the neighborhood.

Pupils face the rising sun; the setting sun; at noon; sunrise and sunset. Face the east, west, and different points of the compass. Exhibit compass if possible. Locate numerous objects in the room. Directions of lines in the room; cracks, desks, etc. Objects near the house. Walks of pupils to and from school. Direction of winds. How does the sun get back to the east every twenty-four hours? Use globe to illustrate day and night. Let pupils use globe and explain.

THIRD MONTH.

Idea of Distance.—Compare the length of objects with one another. Supply pupils with foot rules. Guess length of objects, then measure them. Extend this practice to the yard, when inside of room is exhausted. Pupils guess distances, then measure them. Select objects half mile away, a mile away. Distance to school or home. Combine distance, time, and direction by the use of imaginary or real journeys. To illustrate: The church is about a mile due east, and it will take about twenty minutes to walk to it.

Idea of Map.—Use north board. Top, north; bottom, south; right hand, east; left hand, west. Draw this figure:



Form many questions such as: Direction of 3 from 1; direction of boundary lines, etc. Require pupils to form questions. Draw map of school room upon definite scale, as one-fourth inch to a foot. Pupils compare map with room; note boundaries and their directions. Draw map of school ground on a scale of one inch, or one-half inch to the rod; locate house, pump, etc.; note direction and length of boundaries. Recite from map until all understand it.

FOURTH MONTH.

Map Drawing.—Draw map of school grounds with adjoining fields on reduced scale. Pupils draw maps of home farms, locating pasture land, cornfields, brooks, fences, etc. Take pupils on imaginary journeys over the school district, locating roads, brooks, woods, farmhouses, and the schoolhouse. Write a list of objects to be located. Pupils draw map of district. Write a list of objects on margin of map, referring by figures 1, 2, 3, etc., to the objects represented on map. Let scale be an inch to the mile. Work up the township map in the same way. Locate all schoolhouses, churches, and towns.

FIFTH MONTH.

Climate.—Teach climate as the pupils have experienced it; as to temperature—hot, cold, moderate; as to moisture—dry, wet, damp; as to diseases—healthy and unhealthy. Teach directions to travel to find changes in climate. Teach the useful vegetation of the neighborhood, pupils making lists of articles raised on farms. Tell what is done with them. Those sent away are called *exports*. Make lists of vegetable productions brought in for home use; as, sugar, coffee, cinnamon, rubber, camphor, etc., *imports*. Follow the same plan with animals and minerals. Be sure to study home exports and imports.

SIXTH MONTH.

Occupations.—Pupils name and write as long a list as possible of the different trades and kinds of business. After several lessons spent in preparing and talking about them, begin to classify. Put everything that is done on farms under *agriculture;* all buying, selling and transporting under *commerce;* all in which things are made under *manufacturing*. Teacher speak of *lumbering, mining, fishing, hunting*, etc. Clergymen, lawyers, physicians, authors, journalists, teachers, etc., belong to the *professions*. Call attention to the different conditions of society and peoples, as *savages, partly civilized*, and *civilized*.

Government.—Who governs the school when in session? Who hires the teachers, buys coal, and cares for the house? Who governs the family? Who governs the state? Who makes the laws? Who governs the United States? Study purpose of government, punishments, etc. Lead pupils to see necessity for good government, and that the best government is among civilized people.

SEVENTH MONTH.

Draw a map of the county, locating railroads, towns, and rivers. Indicate adjoining counties and state shortest distances to them. The county seat; why so called? The county officers and some of their duties.

NOTE.—Large sheets of manilla wrapping paper answer well for map drawing.

EIGHTH MONTH.

Review the work of the year. Deduce this definition—*Geography is a study of the earth and what is on it.*

FIFTH YEAR.

TEXT-BOOKS—Fourth Reader, Elementary Grammar, Elementary Arithmetic, Elementary Geography.
READING—Fourth reader.
SPELLING—Oral spelling, word analysis, etc.
WRITING.—Practical exercises.
GRAMMAR—Elementary text.
ARITHMETIC—Reading and writing numbers, fundamental rules, etc.
GEOGRAPHY—Elementary geography.
SCIENCE—See "Observation Work."
DRAWING—See "Form Study and Drawing."

READING.

Complete about sixty per cent of fourth reader. The principal object before the learner in this grade is to understand the language and then to present the thought clearly and distinctly to the hearer. A knowledge of the meaning of words is of great importance, and should be learned from the context.

The meaning and rendering of a phrase or sentence should be considered, as well as the meaning of the words. Proper articulation should be cultivated, and correct accent, emphasis, and inflection should be secured. The reading should be done in natural tones. When a selection is read aloud, it is for the purpose of fully conveying the meaning to the hearer. Extraordinary elocutionary efforts, adding nothing to the presentation of thought, are to be shunned. The full explanation and analysis of the lesson will require study on the part of the teacher. If he has not studied the lesson carefully, the class will have poor instruction. All random efforts are futile. If the teacher awakens an interest in the reading lesson, a point of prime importance, *he* will be interested, will plan his work carefully, and study diligently, in order to carry the scheme he has framed to successful completion. The student-teacher is in demand.

SPELLING.

NOTE.—There should be but two classes in spelling, as stated in "Classification" in the introduction to this Course. Two years' work is outlined for each class, the work of the fifth and sixth years for intermediate class, and that of the seventh and eighth years for the advanced class. By the "Alternation of Work" as explained in the introduction, each pupil may have four years of systematic work in this branch, and the school never be burdened with more than two classes in spelling. This year, 1894-5, have the classes in spelling take the work of the fifth and seventh years, respectively. Next year, 1895-6, take the work of the sixth and eighth years, respectively; and the year following have classes in the work of the fifth and seventh years only, and so continue. By this alternation some pupils may take the work of the sixth year before that of the fifth, or that of the eighth before the seventh, but this can be done without loss or serious inconvenience. If all schools throughout the State will observe this order of alternation, a pupil may move from one district to another, or from one part of the State to another, and take up the work at the proper place in the regular class of the school, without loss of time by repetition of work previously studied.

Definite work is given for each month, but this is intended to be suggestive rather than exhaustive; thus in the study of homonyms, one lesson a week will be sufficient to do the work

assigned, but it is expected that much additional work of this kind will be given; the same may be said of word analysis. It is supposed that much practical work in spelling, taken from the spelling book or elsewhere, will be given. The work here studied is the minimum, and will be the basis of the monthly written reviews or examinations.

FIRST MONTH.

1. Teach the division of letters into vowels and consonants.
2. Make a list of names of objects that you can see on your way to school and in the schoolroom, and learn to spell them.
3. Learn the spelling and the correct use of the following words: *pour, pore; plum, plumb; beau, bow; peace, piece.*
4. Select, define, and use in sentences, a list of words containing the suffix *less;* as, homeless, fearless, etc.

SECOND MONTH.

1. Teach the meaning of monosyllable, dissyllable, trisyllable, and polysyllable.
2. List of articles used in kitchen.
3. Study *limb, limn; beer, bier; ring, wring; straight, strait.*
4. Study words containing the suffix *ful.*

THIRD MONTH.

1. Teach meaning of accent, primary and secondary. Make a list of words in which a change in accent makes a change in meaning; as, con'duct, conduct', etc.
2. List of articles kept for sale in a grocery store.
3. Study *mote, moat; rain, rein, reign; paws, pause; heart, hart.*
4. Study words containing the suffix *en.*

FOURTH MONTH.

1. Teach meaning of primitive word, and derivative word. Make lists to illustrate each class.
2. List of names of colors, and words relating to color.
3. Study *bare, bear; isle, aisle; high, hie; ail, ale.*
4. Study words containing the suffix *ize.*

FIFTH MONTH.

1. Teach meaning of compound word. Make a list of compound words and study the use of the hyphen.
2. List of names of occupations.
3. Study *bale, bail; beech, beach; beet, beat; break, brake.*
4. Study words containing the suffix *er.*

SIXTH MONTH.

1. Teach meaning of silent letter. Uses of silent letters. Under what conditions certain letters are silent; as, "*N* final after *l* or *m* is silent". Examples; kiln, hymn, limn, column, solemn, autumn, contemn, condemn.
2. Lists of articles kept for sale in a dry goods store.
3. Study *coarse, course; seal, ceil; due, dew; faint, feint.*
4. Study words containing the suffixes *let* and *ling.*

SEVENTH MONTH.

1. Teach meaning of abbreviation. When to use abbreviation. Make a list of common abbreviations.
2. List of tools used in gardening and farming.
3. Study *fowl, foul; freeze, frieze; gait, gate; gilt, guilt.*
4. Study words containing the suffix *ness.*

EIGHTH MONTH.

1. Definition of suffix. Make a list of suffixes and learn their meaning.
2. List of garden and farm products.
3. Study *hale, hail; gild, guild; sight, site, cite; clime, climb.*
4. Study words containing the suffix *ly.*

WRITING.

The work this year should consist largely of paragraphing exercises. Great care should be taken that all written work should be in accord with the instructions. Indeed it would now be wise to make all written work a lesson in penmanship, and grade accordingly. This plan should be the rule for the sixth, seventh, and eighth years. It would be a good plan for each teacher to own and master a good treatise on rapid writing, and adapt the work there outlined to the requirements of his school.

ELEMENTARY GRAMMAR.

NOTE.—The pupils of the fifth and sixth years of the course may be classed together. This year's work need not be taught each year, but may alternate with sixth year's grammar. The teacher should be on the alert to gather up the words and forms, which, used incorrectly, account for the common errors in language.

FIRST MONTH.

Elementary text-book in grammar introduced.

Definitions.—Definitions of terms as needed. The sentence as a whole; subject, predicate, object. The noun, kinds of nouns; singular and plural forms. Practice on sentences in readers.

SECOND MONTH.

The Verb.—Transitive, intransitive, copula. Elements of a sentence. Drill upon forms of irregular verbs.

THIRD MONTH.

The Adjective.—Descriptive and definitive; the articles. To illustrate, cause the pupil to notice color, size, and form; qualities, such as, smooth, rough, hard, soft, heavy, light, long, short, broad, narrow, round, etc. Make easy comparisons. Proper use of adjectives after the verbs *look, seem, feel, appear, smell, taste.*

FOURTH MONTH.

The Pronoun.—Personal, relative, interrogative; various forms of each used in sentences; study more minutely these forms when used as subject, object, possessive, and after the verb "to be." Compositions upon simple subjects.

FIFTH MONTH.

Adverbs.—Drill on sentences in which adverbs modify verbs; in which adverbs modify adjectives; in which adverbs modify adverbs. Position of adverbs in sentences. Use of contractions; as, *don't, can't,* etc.

SIXTH MONTH.

Preposition, Conjunction, Interjection.—Develop the idea of "relation" as used in the definition of a preposition; as, "The boy sat *by, in, upon, under,* or *against* the house." Most pupils have difficulty in understanding what is meant by relation. In most cases, this relation is one of position. To make this clear, select prepositions from reader; state word following and preceding it. Commit list of prepositions. Use of conjunctions to combine words and statements. Conjunctions used in pairs.

SEVENTH MONTH.

Analysis.—Analysis of simple sentences. Distinguish between analyzing and diagraming a sentence. Definition of phrase. Use and position of phrases in sentences.

EIGHTH MONTH

Compound Sentences.—Show that the subject may be compound; the predicate may be compound; the object may be compound. Analysis of compound sentences. Define clause. Complex sentences. Drill upon changing simple to complex and compound sentences. Find examples in reader of all. Review the work of this year.

ARITHMETIC.

Do not trouble pupils with the more complex problems. Use simple forms, but enough to give clear ideas. Keep in mind this work is introductory. Clear ideas concerning fundamentals, and not exact knowledge of extended processes, is contemplated.

FIRST MONTH.

Read many numbers containing three periods. Teach definition of *notation*, *numeration*, and that ten units of one order make one of the next. Write numbers in words and have pupils read and change to figures. Teach multiplying and dividing by 10 and by 11. Make applications. Teach table of things, of paper, the number of pounds in a bushel of potatoes, corn, and all the common grains; in a barrel of flour, of pork, etc. Make and compute bills, practice addition and subtraction of large numbers.

SECOND MONTH.

Teach multiplication when the multiplier is represented by more than one figure. Long division, first, by a number less than 10, then by 12, 13, and by any number to 30. Make actual measurements of floors, blackboards, school yard, etc., finding contents of surfaces in square feet, square yards, etc. Continue diligent practice in long division.

THIRD MONTH.

Practice multiplication with multipliers containing three or four orders, and division when the divisor contains three. Teach terms and use them constantly—multiplicand, product, quotient, etc. Show divisors and multiples. Teach factoring, greatest common divisor, and least common multiple of numbers less than 300. Cancellation.

FOURTH MONTH.

Give correct definition of a fraction. Illustrate fully. Teach mathematical terms as they become necessary. Teach reading of fractions; write in words; have pupils write in figures. Teach proper and improper fractions, and mixed numbers. Reduction of integers and mixed numbers to fractions; fractions to integers or mixed numbers; fractions to lowest terms; fractions to higher terms. Do not use large numbers unless they can be easily divided.

FIFTH MONTH.

Teach addition and subtraction of fractions, using small numbers in numerators and denominators. Teach addition and subtraction of mixed forms; as, $12\frac{1}{2}$, $16\frac{2}{3}$, without changing to improper fractions. Give many problems.

SIXTH MONTH.

Teach multiplication and division of fractions, all forms. Give many exercises and practical problems. Review.

SEVENTH MONTH.

Show how decimal parts are produced. Teach definitions exactly and illustrate until clearly understood. Come back to fundamental points day after day until known. Teach decimal orders and how they should be written. Teach the correct pronunciation and spelling of the names of decimal orders. Teach reading of decimals. In reading designate the position of the point by *and*. Drill in writing decimals. Compare with common fractions and integers as to value. Change decimal to common fractions and common fractions to decimals. Teach addition, subtraction, multiplication, and division of decimals. Master the mechanical pointing of results. Do not allow children to fail here. Great trouble is caused by inability to point sums, products, and quotients correctly.

EIGHTH MONTH.

Teach United States money as a form of decimals. Practice changing dollars to cents and *vice versa*, by changing the position of the point. Teach dry and liquid measures; avoirdupois and troy weights; long, square, and cubic measures; and time measure. Learn tables thoroughly. Teach reduction, addition, subtraction, multiplication, and division of denominate numbers.

ELEMENTARY GEOGRAPHY.

An elementary text-book should be in the hands of the child. He should be taught to read it. Many books are now arranged with reading lessons, alternating with map studies. It has been found a good practice to have pupils read even the map questions. This will show mispronunciation of difficult names by the pupils, and give the teacher opportunity to correct. New and difficult names should be spelled and pronounced. The pictures should be studied to illustrate the text. All charts, diagrams, and marginal explanations should be explained. The purpose of this work is not so much the location of places as to familiarize the pupil with geographical ideas and language.

FIRST MONTH.

Earth as a Whole.—Study the earth as a whole by means of a globe and map; its motions and their results; divisions into zones with their characteristics; general divisions of land and water; with names and map representations; hemispheres with map questions. This work will include all before North America.

SECOND MONTH.

North America.—Study North America by reading the text and maps. Follow directions of author; in using the book, arrange facts, after study, in the following form for recitation and reviews:

North America.....
1. Boundary.
2. Coast lines—Direction, regularity, indentations, and projections.
3. Surface—Mountain ranges, plateaus, and plains.
4. Lakes, etc.
5. Rivers.
6. Cities.
7. Islands.
8. Climate.
9. Productions.. Animal. Vegetable. Mineral.
10. Political divisions.
11. Inhabitants.
12. Occupations.

THIRD MONTH.

New England States.—Read text and study maps. Draw map. The form for arranging the work in North America can be used with a little change in this and following divisions. See that some important fact is associated with each place learned, as indicated by question, "*What is important about this place?*" This is the object of the "catchwords" and interrogation points placed after the geographical names given below as examples:

Mountains..... 1. White (summer resort). 2. Green (Allen).

Mountain Peaks 1. Katahdin (?). 2. Washington (tourists).

Capes..... 1. Ann (lighthouse). 2. Cod (lighthouse).

Islands..... 1. Grand Menan (fisheries). 2. Mt. Desert (summer resort). 3. Martha's Vineyard (?). 4. Block (Adrian Block).

Rivers..... 1. St. John (boundary). 2. Penobscot (size). 3. Merrimac (manufactories). 4. Connecticut (?).

Lakes..... 1. Grand (St. Croix River). 2. Moosehead (game). 3. Winnipiseogee (?). 4. Champlain (French).

Bays..... 1. Passamaquoddy (fish). 2. Buzzards. (?)

Cities..... 1. Portland (peninsula). 2. Augusta (U. S. institutions). 3. Bangor (lumber). 4. Salem (witchcraft). 5. Lowell (cotton goods). 6. Plymouth (Pilgrims).

NOTE.—Have numerous tracing lessons and imaginary voyages. Make the lesson and the study lively by talks with pupils about history connected with places, with colleges, scenery, tunnels, water power, derivation of names, etc.

FOURTH MONTH.

Middle Atlantic States.—New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and West Virginia. Study as outlined in preceding months, using the blackboard forms, and associating some important fact with each place learned.

The Southern States.—North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Tennessee.

FIFTH MONTH.

North Central States.—Ohio, Indiana, Illinois, Kentucky, Michigan, Wisconsin, Minnesota, South Dakota, North Dakota, Iowa, Nebraska, Kansas, and Missouri.

SIXTH MONTH.

The Pacific States and the Territories.—California, Oregon, Washington, Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico, Alaska, and District of Columbia.

Dominion of Canada, Greenland, Mexico, Central America, and West Indies.

SEVENTH MONTH.

Europe.—Study as directed for North America.

Asia.—Study as directed for North America.

EIGHTH MONTH.

South America.—Study first as a continent. Draw map of continent, and fill in countries, etc., as learned. Use blackboard form for study and recitation, as given in the study of North America. Continue to make lists of places, associating important facts with each. Use outline maps continually.

Africa and Oceanica.—Study as above.

GEOGRAPHICAL READER.

Schools using a geographical reader or readers, or counties in which these are used, may divide the subject into eight parts as nearly equal as convenient and complete one part each month.

SIXTH YEAR.

TEXT-BOOKS—Fourth Reader, Elementary Grammar, Complete Arithmetic, Elementary Physiology, Elementary History.
READING—Fourth reader completed.
SPELLING—Word analysis, homonyms, etc.
GRAMMAR—Elementary grammar completed.
ARITHMETIC—Complete written arithmetic begun.
PHYSIOLOGY—Elementary text for supplementary reading.
HISTORY—Elementary history.
SCIENCE—See "Observation Work."
DRAWING—See "Form Study and Drawing."
NOTE.—No geography this year except that connected with history.

READING.

Fourth reader finished and reviewed. For suggestions, see fifth year.

SPELLING.

NOTE.—Carefully read the note at the head of fifth year spelling. The work given below should be taken only in 1895-6, and each alternate year thereafter.

FIRST MONTH.

1. Study various sounds represented by *a*, and diacritical marks used to indicate them.
2. Make a list of names of domestic and wild animals of this locality, and learn to spell them. Noted wild animals of other localities.
3. Learn the spelling and correct use of the following words: *kill, kiln; mean, mien; core, corps; creek, creak.*
4. Select, define, and use in sentences, a list of words containing the prefix *re*; as, rebuild, recall, etc.

SECOND MONTH.

1. Sounds represented by *e*, with diacritical marks.
2. List of names of birds of this locality. Noted birds of other localities.
3. Study *hall, haul; jam, jamb; need, knead; night, knight.*
4. Study words containing the prefix *in.*

THIRD MONTH.

1. Sounds represented by *i*, with diacritical marks.
2. List of irregular plurals.
3. Study *metal, mettle; lee, lea; knit, nit; bridle, bridal.*
4. Study words containing the prefix *mis.*

FOURTH MONTH.

1. Sounds represented by *o*, with diacritical marks.
2. List of names of minerals of this locality. Also of other localities.
3. Study *vice, vise; raise, raze, rays; peal, peel; peak, pique.*
4. Study words containing the prefix *dis.*

FIFTH MONTH.

1. Sounds represented by *u* and *y*, with diacritical marks.

2. List of words designating males and females; as, uncle, aunt, etc.
3. Study *peer, pier; plain, plane; quire, choir; nay, neigh.*
4. Study words containing the prefix *en* or *em.*

SIXTH MONTH.

1. Sounds represented by *c, g, n, s* and *x*, with diacritical marks.
2. List of names of parts of common objects; as, parts of a house, a chair, the body, etc.
3. Study *flee, flea; hoop, whoop; lesson, lessen; hair, hare.*
4. Study words containing the prefix *fore.*

SEVENTH MONTH.

1. Sounds represented by *ch* and *th.* Make all diacritical marks. Write their names and give their uses.
2. List of names of flowers, shrubs, and trees of this locality. Noted trees of other localities.
3. Study *fur, fir; feet, feat; flow, floe; berth, birth.*
4. Study words containing the prefix *be.*

EIGHTH MONTH.

1. Definition of prefix. Make a list of prefixes and learn their meaning.
2. List of contracted forms of words, and when to use them.
3. Study *right, wright, rite, write; cast caste; seed, cede; seer, sear, sere.*
4. Study words containing the prefix *co* or *con.*

GRAMMAR.

Elementary text-book in grammar completed.

NOTE.—The pupils in FIFTH and SIXTH year grammar should be classed together, where it can be conveniently done.

FIRST MONTH.

The Noun.—Gender, person, number, and case. Parsing. Note carefully the methods of distinguishing the genders.

RULES FOR FORMING PLURALS.

1. Nouns whose last sound will unite with *s.*
2. Nouns whose last sound will not unite with *s.*
3. Nouns ending in *y*, preceded by a consonant.
4. Nouns ending in *f* or *fe.*
5. Nouns ending in *o*, preceded by a consonant.
6. Plurals of letters, figures, marks, and signs.

Note exceptions to the above rules.

Declension.—Decline nouns in common use, and use their various forms in sentences. Show that figures, marks, phrases, and clauses may be used as nouns.

Remember that parsing consists: (1) In naming the part of speech; (2) in telling its properties; (3) in pointing out its relation to other words; (4) in giving the rule for its construction.

SECOND MONTH.

The Pronoun.—Personal, possessive, relative, and interrogative. Name and decline the simple personal pronouns. Special uses of *you, we,* and *it.* Compound personal pronouns, how formed. Use of *mine, thine,* etc. Uses of *who, which, that,* and *what.* Continue exercises in parsing and analysis.

THIRD MONTH.

The Adjective.—Descriptive and definitive; degrees of comparison; different methods of comparison; classes of numeral adjectives; errors to be avoided. Continue exercises in parsing, analysis, and composition—oral and written.

FOURTH MONTH.

The Verb.—Transitive and intransitive; regular and irregular; properties—voice, mode, tense, person, and number; auxiliaries; correct use of irregular verbs in sentences. Change sentences from active to passive form. Train the pupils to point out phrases, clauses, and different kinds of sentences as found in the reader.

FIFTH MONTH.

The Adverb.—Adverbs of time, place, cause, manner, and degree. Comparison of adverbs.

SIXTH MONTH.

Prepositions, Conjunctions, and Interjections.—Conjunctions—co-ordinate, subordinate, correlative. Prepositions—Most pupils have difficulty in understanding what is meant by relation. In most cases this relation is one fo position. To make this clear, select prepositions from reader. State word following and preceding it. Commit list of prepositions.

Review parts of speech. Have definite forms of parsing each part of speech. Continue exercises in analysis and composition.

SEVENTH MONTH.

Syntax.—Review rules for using the noun and pronoun: (1) as the subject; (2) in predicate; (3) in the possessive; (4) in apposition; (5) independently; (6) as object of a verb; (7) as object of a preposition; (8) rules governing pronouns; (9) agreement of verbs with subject; (10) rules governing adjectives, adverbs, and infinitives.

EIGHTH MONTH.

Punctuation Marks.—Give attention to the comma, semicolon, colon, period, interrogation point, exclamation point, dash, parenthesis, and bracket. Uses of apostrophe, hyphen, quotation marks, index, and caret. Require but few rules, but illustrate each fully. Refer to the reader as much as possible in this connection.

ARITHMETIC.

FIRST MONTH.

Teach numeration to five periods. Practice writing large numbers. Teach the theory of notation fully. Teach the principles of the Roman notation and practice writing numbers in it. Teach all definitions.

SECOND MONTH.

Addition. Review the forty-five possible combinations. Drill until the work becomes mechanical. Learn a rule or formal statement of the process of addition. State principles. Compare addition in the decimal notation with addition of denominate numbers. Show that the difference is merely in the scales.

THIRD MONTH.

Pursue same plan with subtraction; multiplication. Teach definitions and principles. Learn rules and methods of proof. Multiply by factors.

Learn aliquot parts of 10, 100, and teach short methods of multiplying by means of them.

FOURTH MONTH.

Division, definitions, principles, rules. Practice long division until the process becomes both easy and rapid. Short methods; dividing by 10, 100, etc. Review all definitions, statements, and principles studied this year.

FIFTH MONTH.

Properties of numbers. Definitions of integral, fractional, and mixed numbers. With respect to factors, integers are composite, prime, even, and odd. Define each and illustrate. Teach factors of all numbers below 100. Teach common factors of many of same numbers. Develop the tests of divisibility by 2, 3, 4, 5, 6, 8, 9, 10, and 11. Cause pupils to master these tests and apply them in factoring. Factor many numbers. Teach cancellation.

SIXTH MONTH.

Teach the greatest common divisor by factoring. Study the reasoning and learn analysis. Method by division. Make applications.

SEVENTH MONTH.

Study multiples of numbers and common multiples. Learn principles. Practice finding the least common multiple of small numbers. Be sure to give clear ideas of multiples and divisors.

EIGHTH MONTH.

Review or practice as class needs.

PHYSIOLOGY.

FIRST MONTH.

Bones.—Use book. Define anatomy, physiology, hygiene. Cells. Bones—structure, uses, kinds, composition. Joints. Ligaments. Hygiene of bones.

SECOND MONTH.

Muscles.—Number, purpose, kinds, structure, contraction. Hygiene of muscles. Alcohol and muscle. Food—necessity for, kinds. Water should be pure. Cooking necessary; ways of cooking. What and how we should eat.

THIRD MONTH.

Digestion.—Necessity for food; alimentary canal; mastication; teeth; saliva and its uses; stomach; gastric juice; hygiene of stomach. Liver; bile; pancreas. Fluids concerned in digestion. Conditions of a good digestion. Effects of alcohol, tobacco, and opium on the digestive organs. Absorption; villi; portal vein; thoracic duct; lymphatic glands. How the digested foods enter the circulation. Lymphatics.

FOURTH MONTH.

The Blood.—Amount, composition, kinds—arterial and venous. Pulmonary artery. Clotting of blood. The heart; position, structure, course of blood through, movements, and rest of. Pulse, arteries, veins, capillaries; structure, differences. Effects of narcotics and stimulants on heart and circulation. Respiration, larynx, epiglottis, trachea, pleura, lungs. How we breathe, why we breathe, how to breathe.

FIFTH MONTH.

Ventilation.—Pure air, avoid currents, disinfectants, contagion. Sleep—necessity; early to bed. Kidneys. The skin—structure, sweat glands, oil glands. Hair. Bathing—why, when. Temperature of body. Clothing—kinds, uses, etc. Effects of alcohol on temperature.

SIXTH MONTH.

Nervous System.—Brain—white and gray matter, cerebrum, cerebellum, medulla oblongata. Spinal cord. Nerves. Reflex action. Effects of narcotics and stimulants.

SEVENTH MONTH.

The Senses.—Sense of sight; eye well protected; oil glands, tears, eyeball. How we see. Care of eyes. Sense of taste. Sense of smell. Sense of touch. Sense of hearing. Structure of ear.

EIGHTH MONTH.

Review.—Review work of the year.

ELEMENTARY HISTORY.

NOTE.—The book should be used as a supplementary reader. The geography should be used in the preparation of the lesson. Have outline maps before the class during the recitation. A good review of geography can be secured in this way. Locate important cities, routes of marching armies, great battles, and campaigns. Children should read questions as well as answer them. Have them prepare lists of original questions for class use. Do not make the work heavy. Fix facts by means of stories, if possible.

FIRST MONTH.

Discovery of America.—Columbus, Palos, Genoa, names of vessels, date of setting sail, landing, natives, Vespucius, Cabot, Jamestown, John Smith, Pocahontas, Indians, where they came from, how they lived, dwellings, weapons, Powhatan, Rolfe.

SECOND MONTH.

New England.—Children should commit Mrs. Heman's poem, "The Landing of the Pilgrim Fathers". The Mayflower, Cape Cod Bay, Plymouth, Samoset, Windsor, Thomas Hooker, Roger Williams, Narragansetts, Capt. Holmes and the Dutch, Henry Hudson, Half Moon, William Penn, Swedes and Finns. The Southern States—Charleston, Savannah, Oglethorpe, The Spaniards and St. Augustine, The Pequot War, King Philip's War.

THIRD MONTH.

Wars.—King William's War, Queen Anne's War, French and Indian War, War of the Revolution. Louis XIV, King William, Queen Anne, Schenectady, Haverhill, Montreal, Quebec, Montcalm, Wolfe. The Revolution—George III, Taxes, Stamp Act, Tea Party, Boston, Gage, Parliament, Continental Congress, Washington, Lexington, Concord, Bunker Hill, Declaration of Independence.

FOURTH MONTH.

War of Revolution.—Finish War of the Revolution; locate all places on map. Washington's retreat to Pennsylvania, Battle of Trenton, Brandywine, Germantown, Saratoga, Monmouth, Stony Point, Camden, West Point, Yorktown, Hessians, Washington, Lydia Darrach, Gates, Burgoyne, Tryon, Wayne, Putnam, Arnold, Andre, Champe, Cornwallis, Treaty of Peace.

FIFTH MONTH.

Government. — The Constitution; the first president, inauguration, Adams, Jefferson, Burr, Hamilton, Leopard, Chesapeake, Tripoli, Preble, Decatur, Madison, War of 1812, Constitution and Guerriere, Perry, burning of the Capitol, New Orleans, Jackson, peace, Baltimore, Fort McHenry, "Star Spangled Banner"; have pupils commit the poem.

SIXTH MONTH.

Presidents to 1860.—Purchase of Louisiana—its extent, price. Purchase of Florida, The Erie Canal, The Black Hawk War, Seminole War, Death of Harrison, his successor, how president is chosen, how inaugurated, the Mexican War—Texas, battles in Texas, in Mexico, Taylor, Santa Anna, Scott, peace, territory acquired. Gold discovery—Sutter, Marshall, Sacramento, San Francisco, Darien, California a state, Fugitive Slave Law, Kansas troubles, Abraham Lincoln, Jefferson Davis, secession, Fort Sumter, Gen. Anderson, Beauregard, Edmund Ruffin, Fort Henry, Donelson, Shiloh, Farragut at New Orleans, Merrimac and Monitor, Hampton Roads, Norfolk.

SEVENTH MONTH.

Surrender of Vicksburg, Gen. Grant, Lookout Mountain, Missionary Ridge, Gettysburg, Lee, Meade, Hooker, Stonewall Jackson, Chancellorsville, Sherman's March to the Sea. Appomattox, Assassination of Lincoln, Booth, Johnson, impeachment, Grant President, Hayes, Garfield, Arthur, Cleveland, Harrison, Cleveland, the Centennial, the World's Fair, commemorating the discovery of America.

EIGHTH MONTH.

Review.—Review all work gone over. Study maps carefully, locating places, direction of moving armies, etc. Geography should never be omitted from the history lesson. Study the great men. They shape the destinies of the country, or mark the line of its advancement.

SEVENTH YEAR.

TEXT-BOOKS—Fifth Reader, Advanced Grammar, Arithmetic, Geography, and History.
READING—Fifth reader.
SPELLING—Oral spelling, orthographic terms, rules, and derivations.
GRAMMAR—Etymology.
ARITHMETIC—Common and decimal fractions.
GEOGRAPHY—Mathematical geography, North and South America.
HISTORY—To administrations.
SCIENCE—See "Observation Work."
DRAWING—See "Form Study and Drawing."

READING.

Complete about sixty per cent of fifth reader. The teacher is referred to what has been said of reading in the fourth reader grade. All that applies to that grade may be utilized in the advanced division. Ability to read well can

only be attained, as proficiency in the other branches is, by study and practice, by regular and continued effort. Random work, work without a well laid plan, will accomplish but little. The efforts exerted must be steady. If a fifth reader is dispensed with, as some have advised, something as good or better must take its place, such as supplementary reading of the proper grade, consisting of good selections taken from the best American and English authors.

SPELLING.

NOTE.—Carefully read the note at the head of fifth year spelling. In rural schools and in graded schools of six rooms or less, have but one class in spelling for pupils of the seventh and eighth years. The work given below should be taught in 1894-5, and each second year thereafter, alternating with the work of the eighth year. Remember that the work given in the study of synonyms, derivation of words, and pronunciation, is suggestive rather than exhaustive, and additional work may be given. There should be much practical work in spelling outside of what is given here. This represents the minimum that should be done in any school, and is made definite for each month, that it may be the basis of the monthly written review or examination.

Many schools use the history lesson as the source from which to draw words for spelling. Such schools have found the following plan a good one: Number the pupils in the class. Have No. 1 select twenty words from to-morrow's lesson in history, and five review words from preceding lessons, and write them on the board. Pupils copy, and study, and preserve, learning accents with markings and definitions. In class, spell orally, pronouncing all syllables from the first, and define.

FIRST MONTH.

1. Define orthography and orthoepy.
2. Give synonyms for the following words, and illustrate their use in sentences. Use the dictionary in discriminating shades of thought: *absurd, abundant, adversary, affliction.*
3. Study pronunciation and diacritical markings of the following words: *abdomen, acorn, after, again, albumen, almond, alms, aniline, apparatus, area.*
4. Select and define a list of words in which *logy* (science of), enters as a part; as, physiology, zoology, geology.

SECOND MONTH.

1. Define spelling, phonetic spelling, orthographic spelling.
2. Give synonyms: *agony, alien, amusement, ancient.*
3. Pronunciation and diacritical markings: *attar, banquet, beckon, been, bellows, bicycle, bleat, bosom, bouquet, bovine.*
4. Study words containing *meter* (a measure); as, diameter, chronometer, barometer.

THIRD MONTH.

1. Define word, simple word, compound word. Give numerous examples. Study use of hyyhen in compound words.
2. Give synonyms: *anecdote, antipathy, apparel, apparent.*
3. Pronunciation and diacritical markings: *breeches, bronchitis, brooch, business, butterine, cafe, calliope, calm, canine, carat.*
4. Study words containing *graphy* (a writing); geography, orthography, biography.

FOURTH MONTH.

1. Define primitive word, derivative word. Give numerous examples.
2. Give synonyms: *apparition, arduous, arrogance, august.*

3. Pronunciation and diacritical markings: *carbine, cartridge, cemetery, cerebral, chaise, coffee, combatant, comparable, concord, confidant.*

4. Study words containing *pose* (to put or place); as, compose, depose, transpose.

FIFTH MONTH.

1. Define monosyllable, dissyllable, trisyllable, polysyllable. Give numerous examples.

2. Give synonyms: *auspicious, awkward, barbarous, beautiful.*

3. Pronunciation and diacritical markings: *congenial, coquette, cordial, cost, coupon, courteous, crematory, crinoline, crocket, cupboard.*

4. Study words containing *duce* (to lead or draw); as, deduce, induce, reduce.

SIXTH MONTH.

1. Define prefix, suffix, affix, root. Give numerous examples.

2. Give synonyms: *behavior, beholder, blameless, boisterous.*

3. Pronunciation and diacritical markings: *cupola, dahlia, Danish, debris, decade, deficit, depot, desert, discern, disputant.*

4. Study words containing *tract* (to draw); as, attract, subtract, distract.

SEVENTH MONTH.

1. Define syllabication, syllable, ultimate syllable, penultimate syllable, antepenultimate syllable, preantepenultimate syllable. Give numerous examples.

2. Give synonyms: *bold, booty, bravery, brief.*

3. Pronunciation and diacritical markings: *dissolve, donkey, duet, duty, elite, encore, epistle, ere, err, etiquette.*

4. Study words containing *vert* (to turn); as, divert, convert, invert.

EIGHTH MONTH.

1. Define accent, primary accent, secondary accent. Mark of acute accent, heavy and light. Mark of grave accent.

2. Give synonyms: *brightness, calamity, candid, careful.*

3. Pronunciation and diacritical markings: *exile, exist, extra, extempore, extol, facet, falcon, fatigue, fete, finance.*

4. Study words containing *mit* (to send); as, commit, remit, transmit.

GRAMMAR.

FIRST MONTH.

Sentences.—Define. Lead pupils to see their parts—subject and predicate. Illustrate in many ways from grammar and reader. Classify with respect to use, and with respect to form. Practice classifying sentences in reading lessons.

Write a composition regularly once a month. Subjects can be drawn from the geography and history. In order to succeed, system must be used. 1. Have a composition book in which to copy compositions. 2. Assign a subject, and let the class spend some time in examining authorities, studying and thinking over the subject. 3. An outline should be arranged by the teacher, and the subject treated orally. 4. Write the composition on paper used in school exercises. 5. Teacher then correct spelling, capitals, grammar, etc.

In the history for September, Columbus or John Smith may be chosen for the subject and outlined as follows:

- Columbus
  - 1. Birth.
    - Place.
    - Date.
  - 2. Boyhood.
    - Education.
    - Wool comber.
    - Sailor.
  - 3. Manhood.
    - His theory.
    - Applies for aid.
    - His patrons.
    - Four voyages.
    - Discoveries.
    - His death.
    - Conclusion.

Topics may be selected from geography also. Pupils should use their own language, not what is memorized from books. Distinguish different kinds of composition, as narrative, biography, history, and descriptive; prose and poetry.

SECOND MONTH.

The Noun.—Define. Write lists of all nouns in reading lessons. Classify the nouns of these lists into *proper* and *common*. Note how nouns may change classes. Classify common nouns into class nouns, abstract, collective, and verbal. Readers will supply large lists. They should be studied until these distinctions are clear, and nouns classified readily.

Properties.—Gender, define. Classify the lists already collected. Review ways of distinguishing the genders. Study *person* in the same way. Observe that few nouns are in the first person. Why? Study *number* same way. Study and practice on unusual rules for forming plurals. Note how plurals of letters, figures, etc., are formed. Case: Use not only the lists already made, but collect others, and drill on applying definitions. Be sure to review case after studying the verb. The following is a good model for written parsing:

"*John studies grammar.*"

John, p. n., m. g., 3 p., s. n., n. c., according to rule (state it).

Studies, v., reg., (give parts) tr., a. v., c. f., ind. m., pres. t., 3 p., s. n., rule, etc.

Make the class able to parse the nouns in any ordinary reading lesson.

THIRD MONTH.

The Verb.—Learn full definition. Form lists from readers, and classify into verbs denoting action, denoting being, denoting state. Classify all verbs denoting actions into transitive and intransitive, and define. To the intransitive add verbs denoting *being* and *state*. Study the copula. The verbs sometimes used as copulative verbs. Study participles; every transitive verb has six participles; every intransitive verb three participles. Write participles of verbs listed. Find and write many sentences containing them. Classify verbs with respect to form. Learn the principal parts of verbs listed. Study lists of irregular verbs given in text-books as to principal parts. Note three classes: 1. Parts all alike; 2. Two parts alike; 3. No two alike. Learn definition.

Voice and Mode.—Practice with reader on changing from one voice to another. In this practice lead pupils to see that intransitive verbs have but one form. Auxiliaries; learn list. Mode; define. Make lists of verbs from readers, and classify the modes. Learn forms of modes by observing the auxiliaries which help make each.

FOURTH MONTH.

Tense.—Define. Three general divisions. Relative divisions. Again form lists of verbs from readers, and classify tenses. Teacher and pupils study and criticise lists in class till all are correct. Observe number of tenses in each mode, and their forms. Write forms of each verb in all modes and tenses. Person and number of verbs. Note change of verb for third person singular, and for solemn style. Define conjugation, and study conjugation of *to be*. Note its principal parts, *am* or *be*, *was*, *been*. Learn this rule and practice it: "With *have*, *has* and *had*, use the perfect participle to form the perfect tenses." Learn the principal parts of *go*, and other irregular verbs. Study and state formation of each tense in each mode. Conjugate *fly*, *fail*, *rise*, etc. Write conjugations in full. Note use of auxiliaries to show tenses. Observe change to agree in person and number, to aid in smooth and easy articulation. Criticise your own composition on these points.

FIFTH MONTH.

Conjugation.—Study conjugation of transitive verbs in both voices. Observe likenesses and differences. In passive voice only one of the principal parts appears. Conjugate *see*, *shake*, and *slay*. Why name principal parts? Define synopsis. Make synopsis in full of all verbs studied. The forms already studied are called the common forms. Study emphatic, progressive, and solemn forms. Note defective and redundant verbs. Again study table of irregular verbs, and compare with regular verbs. Conjugate and compare the transitive verb *lay* and intransitive verb *lie* (to recline). Same with *set* and *sit*. Review. Parse exercises furnished by text-book and by readers.

SIXTH MONTH.

Pronouns.—Define. Search reader for kinds of pronouns. Classify list into *personal*, *relative*, and *interrogative*. Learn definition of each accurately. Study personal pronouns. Put all forms of each class into one list and learn declension. Study order of parsing and models. Criticise your own language and composition with reference to correct use of pronouns in predicate.

Adjectives.—Study the adjective; define. Make lists as before, classifying by definitions into descriptive and definitive. Classify definitives into *articles*, *pronominals*, and *numerals*, or as your text classifies them. Study comparison and note classes that admit of comparison.

SEVENTH MONTH.

Adverbs.—Define. Make lists as before. Classify into adverbs of *time*, *place*, *cause*, *manner*, and *degree*. Comparison; order of parsing, and models.

Prepositions.—Learn list and classify into co-ordinate and subordinate; sub-class, if time permits. Study order of parsing and models for same; notice models for parsing correlatives, and combinations of words used as conjunctions.

Interjections.—Practice parsing many miscellaneous selections, and review the noun.

EIGHTH MONTH.

Review.—Review the verb and all other parts of speech. Learn definitions, forms, and terms thoroughly.

The Expletive.—Its construction in the sentence. Drill on the use of *it*, *there*, and *that* as expletives.

ARITHMETIC.

FIRST MONTH.

Fractions.—Definitions, illustrations, and principles to be thoroughly learned and understood. Reduction of fractions in the five cases or forms. Give much practice. Train pupils to tell what they do and why it is correct.

SECOND MONTH.

Addition and Subtraction of Fractions.—Do not be afraid to teach formal statement of processes. If a rule is understood, good language will be a great gain to the pupil in explaining work. Do not fail to cultivate mathematical language.

THIRD MONTH.

Multiplication and Division of Fractions.—See directions for second month. Study complex fractions. Also, find what part one number is of another. One fraction is what part of another, etc.

FOURTH MONTH.

Review.—Study a good list of miscellaneous problems, involving all operations in fractions. Review all definitions, illustrations, principles, explanations, solutions, and rules.

FIFTH MONTH.

Decimal Fractions.—Definition. Numeration and notation of decimals. Teach exact pronunciation and spelling of names of orders. Few pupils learn to write them while in the grammar schools. Teach reduction, addition, subtraction, multiplication, and division of decimals. Do not fail to teach the correct placing of the decimal point. Show that the relation between a tenth and a unit is the same as the relation between a unit and a ten, etc. The pupil must be made independent and self-reliant. Teach United States money as decimals.

SIXTH MONTH.

Compound Numbers.—Definitions, reductions, tables to be learned of English money, avoirdupois weight, troy and apothecaries weight. Measures of extension. Long and square measures. Make applications. Solve problems.

SEVENTH MONTH.

Measures of Volume.—Cubic, wood, and lumber measures. Measures of capacity. Liquid and dry measures.

EIGHTH MONTH.

Miscellaneous Tables.—Circular measure, time measure, longitude and time. Tables of things, of paper, and mariner's measure. Solve many miscellaneous problems, and give a general review of compound numbers, collecting all under the heads of *money, weights, extension, capacity, time, circular measure, and of things.*

GEOGRAPHY.

FIRST MONTH.

Mathematical and Astronomical Geography.—Form, size, and motions of the earth. Proofs of rotundity; proofs of flattening at poles; definition of sphere, surface, circle, circumference, diameter, axis, poles, equator,

meridian, parallel. Length of polar and equatorial diameters; circumference at equator, at parallel of 60; length of time required to walk around the earth, walking 30 miles a day.

Rotation on axis, direction and time of rotation, revolution around sun. Show with a globe or ball, what is meant by ecliptic and inclination of axis. Show the effect upon seasons if the axis were perpendicular to the ecliptic; if the axis were parallel to the ecliptic. Show how much the axis is inclined and how it always points in the same direction. From the inclination of the axis locate the tropics and polar circles and show why the tropics are so called.

March 20th, September 22d, December 21st, and June 21st are important dates in the study of astronomical geography. They mark the solstices and equinoxes (meaning of these terms?). Trace on a globe the day and night circle as it would be on each of these days. Show its relation to the poles and its intersection with the equator. Show that March 20th marks the beginning of the long day at the north pole and the end of the long day at the south pole. Show the reverse of this on September 22d. What are the seasons of the year and the length of day and night in the northern and the southern hemispheres on each of the above named days?

Show that north on the earth means toward the north pole, hence that every place on the earth is south of the north pole; that the same star may be east from one observer and west from another at the same time, while these observers may be either east or west of each other. Explain the method of describing land in the government survey. Define base line; principal meridian. Show how this same method is used in locating places by latitude and longitude.

SECOND MONTH.

North America.—Study the map and text to fill the following outline, also each country in it:

POSITION.—Relative and absolute (latitude and longitude).

FORM.—Direction of coast lines, and their degree of regularity.

NATURAL BOUNDARIES.—Size:—Determined by the scale given and corrected by the text or tables.

SURFACE.—Mountain ranges, plateaus, plains, and drainage.

CLIMATE.—Temperature and moisture, continental and oceanic, modified in places by elevation, position of mountain ranges, kind and direction of winds, amount of rainfall, oceanic currents and length of day and night.

PRODUCTIONS.—Vegetable and animal life are determined by zones of climate first, then modified by local climate. Mineral productions are not determined by such causes.

POLITICAL DIVISIONS.—Reasons for boundaries, inhabitants, races, origin, changes, etc.

OCCUPATIONS.—As determined by climate, soil, and mineral deposits.

Study outline when made, until it is learned. Study the entire continent, learning the usual map questions in the book and as many more as the teacher deems necessary. Read the text for other facts. With slight changes the outline may be applied to each country of North America, and to each division of the United States.

THIRD MONTH.

United States.—Study by groups, and, if time permits and it is found desirable, by single states. Study the New England States, middle Atlantic states, and south Atlantic states.

FOURTH MONTH.

Groups of States.—Study the gulf states, with Tennessee and Indian

Territory, and the north central states east of the Mississippi with Kentucky.

FIFTH MONTH.

Groups of States.—Study the north central states west of the Mississippi, the Pacific states, the mountain states, the territories, and Alaska.

SIXTH MONTH.

Other Countries of North America.—Study the Dominion of Canada, Mexico, Central America, and the West Indies.

SEVENTH MONTH.

South America.—Study South America, reading map and text for the outline of continent as given for North America.

EIGHTH MONTH.

Countries of South America.—Study each country of South America as directed for North America, and learn all map questions.

HISTORY.

NOTE.—It will be found that the child of average ability can easily obtain a good idea of the fundamental facts of United States History, and a fair knowledge of the principles of Civil Government in a period of two years of eight months each. A few leading topics are suggested for each month. Read some of the suggested literature of each period.

FIRST MONTH.

The condition of the leading countries of Europe at the close of the fifteenth century should be clearly set forth. The influence of the printing press; the revival of learning; the religious persecutions; the development of navigation, with relation to their effect on the exploration and settlement of America; should be fully considered before the period of discovery is taken up. In addition to this, a survey of the Indian tribes, their locations and customs, will help to explain existing conditions. This, with the voyages of the Norsemen, Columbus, the Cabots, Vespucci, Balboa, and Magellan, will constitute the first month's work. The literature for this period includes Baldwin's *Ancient America;* Stone's *Life and Times of Red Jacket;* Cooper's *Leather-Stocking Tales;* Lowell's *Chippewa Legend,* and his *Columbus;* Whittier's *Bridal of Pennacook;* Longfellow's *Skeleton in Armor;* Bryant's *Mound Builders;* Irving's *Life of Columbus;* Prescott's *Ferdinand and Isabella;* Helen Hunt Jackson's *Ramona,* and *A Century of Dishonor. Harper's Magazine,* volumes 21, 65, 66, and 67, have articles on the Vikings, The First Americans and The Pueblos. By inquiry among friends and pupils, most of these may be had to read in the history class, serving to illustrate the habits and characteristics of the aborigines and early discoverers.

SECOND MONTH.

The work for this month will include the discoveries and explorations of the Spanish, French, Dutch, and English. The route of each should be clearly traced on sketch maps and the results of each expedition fully ascertained. Especially should the expeditions of DeSoto, Coronado, Cabrillo, Cartier, Champlain, LaSalle, John Smith, Drake, and Henry Hudson, with all that resulted therefrom, be fully understood.

The literature of this period includes Longfellow's *Sir Humphrey Gilbert;* Edward's *Life of Raleigh;* Parkman's *Pioneer's in France,* and *Jesuits in North America;* Wallace's *Fair God; Picture's from Florida* in Scribner's,

volume 9; Kingsley's *Westward Ho!;* Prescott's *Mexico* and *Peru;* Spark's *Marquette.*

THIRD MONTH.

This should take up the period of colonization. Here particular attention should be given to Virginia and her foster colony, Maryland; the London Company; its charter, and aims; its effect for evil; the government of Virginia; Bacon's Rebellion; the Clayborne controversy; the Indian troubles; the allotment of land; the services of Capt. John Smith, and the introduction of slavery. The Maryland grant; objects of the promoters of that colony; the Puritan rebellion; the result.

For literature this month read with the class from Mrs. Sigourney's *Pocahontas, From Colony to Commonwealth;* Eggleston's *Pocahontas; Harper's Magazine,* volumes 52 and 66; Simm's *Smith and Pocahontas;* Coffin's *Old Times in the Colonies.*

FOURTH MONTH.

The Dutch colonies; the Pennsylvania boundary; the controversy with Connecticut; New Sweden; the government; the surrender to the English. Massachusetts, with its foster colonies, Maine, New Hampshire, Rhode Island, and Connecticut. In the study of these colonies the Puritan revolution, the revolution of 1688 should be considered with reference to its effects upon colonial development. Contrast the government of Massachusetts and her foster colonies with the government of other colonies wherever it is possible to do so. The struggles with the Indians; the New England Confederacy; the religious persecutions; Connecticut's Blue Laws should all be considered in the light of their effect upon the people.

The literature of this period is plentiful. Select from Mrs. Heman's *Landing of the Pilgrims, Pilgrims and Puritans;* Longfellow's *Courtship of Miles Standish;* Bryant's *Twenty-second of December;* Holmes' *Robinson of Leyden;* Holland's *Bay Path;* Mrs. Whitman's *Roger Williams;* Irving's *Knickerbocker's History of New York,* and *King Philip's War;* Mrs. Child's *Hobomok;* Whittier's *Margaret Smith's Journal;* Cooper's *Last of the Mohicans;* Hawthorne's *Grandfather's Chair,* part I; and Longfellow's *Giles Corey.*

FIFTH MONTH.

The Carolinas, their settlement and government; Georgia, events leading to its settlement, Locke's plan, how it worked. The Huguenots, who they were, their influence in the new world, their conflicts with the Spanish, the severe trials to which they were subjected throughout the new world, are items of prime importance. Pennsylvania and the events leading up to its settlement, its government, result of this plan, relations with other colonies, with the Indians. Having now considered the settlements, governments, and the results of the various plans, now put on trial by the various colonies and foster colonies, it will be well to consider the further history of them as a community, with common interests in which the seeds of nationalization had begun to germinate. In this connection, their life and wars will be considered in the work of the sixth month.

Read from Coffin's *Old Times in the Colonies; Benjamin Franklin's Life* by himself; and *Old Time Life in a Country Town,* in January *Harper,* 1881.

SIXTH MONTH.

The extent of the French and Spanish territory, extent of the English territory, conflicting claims. The War of the Spanish Succession, the treaty of Utrecht, the effect on the colonies. The wars of George the Second, Frank-

lin's plan of Union in 1754, hostilities of 1754 and 1755, the campaign of 1758, the conquest of Canada, the conspiracy of Pontiac in 1763, the treaty of Paris in 1763. Effects of this period on the colonies, as to nationality, industry, education, literature, church organizations, and slavery, must be clearly brought out.

Read with the class from Longfellow's *Evangeline; The Lady of Fort St. John's*, by Mrs. Catherwood; and the *Story of Dollard* in *Harper's Magazine;* also *The Refugees* in *Harper's Magazine* for 1893, by Canon Doyle. Whittier's *Mogg Megone*, and *Mary Garvin; The Acadian Tragedy, Harper's Magazine*, November, 1882. Hawthorne's *Scarlet Letter;* Irving's *Rip Van Winkle;* Thackeray's *Virginians;* Parkman's *Conspiracy of Pontiac.*

SEVENTH MONTH.

Revolutionary Period, 1763-1781. The Navigation Acts and Writs of Assistance, the Stamp Act, the Congress of 1765, result of this Congress, troubles in New York, affairs in the South, Lord North's financial acts, results, the acts of Parliament in 1774, the Boston massacre, burning of the Gaspee, the acts of Congress in 1775, beginning of hostilities, the battle of Bunker Hill, the expedition to Canada—object and result. Acts of Independence and Union, military events of 1776, military operations of 1777—result of, treaty with France—negotiated by whom? The finances of the war, the naval operations of the Revolution, the military operations of 1778 and 1779 and results. Expedition against the Six Nations and results, the military operations of 1780 and results. Arnold's treason, *effects on the colonies*, are the salient points to be mastered this month.

Select from Longfellow, *Paul Revere's Ride*, *Pulaski's Banner*, and the *Launching of the Ship;* Holmes' *Battle of Lexington*, and *Independence Bell;* Campbell's *Gertrude of Wyoming;* Halleck's *Wyoming;* Drake's *American Flag;* Bryant's *Battle of Bennington;* Coffin's *Boys of '76.*

EIGHTH MONTH.

The campaigns of 1781, the armed neutrality, the treaty of peace, the formation of state government, the cession of public lands, the Articles of Confederation—their weakness, financial troubles, Shay's Rebellion, The Ordinance of 1787, the formation of the Constitution—its distinctive features, the establishment of the new government in three departments. Review.

CIVIL GOVERNMENT—UNITED STATES.

Legislature.—House of Representatives, number, by whom elected, term, qualifications, salary $5,000.

Senate.—Number, by whom elected, term, qualifications, salary $5,000.

Executive.—President, Vice President, term, by whom elected, qualifications, salary; president, $50,000; vice president, $8,000.

Cabinet—Secretary of State, Secretary of Treasury, Secretary of War, Secretary of Navy, Secretary of Interior, Secretary of Agriculture, Postmaster General, Attorney General, salary of each $8,000.

Judicial.—Supreme Court, term, one Chief Justice, salary $10,500, eight Associate Justices, salary $10,000 each.

Circuit Courts.—Term, one judge in each circuit, salary $5,000.

District Courts.—Term, one judge in each district, salary $3,500 to $5,000.

Court of Claims.—Term, five judges, salary $4,500 to $5,000.

1. Name the six objects of the Constitution as stated in the preamble. Commit it.

2. Why have two legislative houses?

3. When does Congress meet?
4. What is "A Congress"?
5. By whom is impeachment made?
6. Name two privileges of a member of Congress.
7. What bills must originate in the house?
8. Name three ways in which a bill, having passed both houses, may become a law.
9. Name six subjects on which Congress may legislate.
10. What is a citizen? An alien? Naturalization?
11. What is a copyright? A patent? What their object?
12. Over what part of the United States has Congress exclusive jurisdiction.
13. Who has the power to declare war? Why this power?
14. Do the people vote for president directly? If not, how is he elected?
15. Can Congress elect a president? Have they ever done so?
16. What is treason? Its punishment?
17. How can we amend the Constitution?
18. What about trial by jury?
19. What is the difference in force between the Emancipation Proclamation and the XIIIth Amendment?
20. Name five acts which a State can not do.
21. What law, provided for in latter part of Cl. 6, Sec. 1, Art. II., has Congress passed that is now in force?

Read for this period from Bryant's *Song of Marion's Men;* Whittier's *Yorktown, Rangers,* and *Pennsylvania Pilgrims;* Hawthorne's *Twice Told Tales;* Cooper's *Spy, Pilot,* and *Lionel Lincoln; Harper's Magazine,* volumes 51, 53, 55, 67; *Atlantic Monthly,* volume 37; Gardener's *Anecdotes of the Revolution;* Thorpe's *Story of the Constitution;* Kennedy's *Horse Shoe Robinson;* Coffin's *Building of the Nation.*

EIGHTH YEAR.

TEXT-BOOKS.—Fifth Reader, Advanced Grammar, Arithmetic, Geography, and History.
READING—Fifth reader or an equivalent in literature. See seventh year.
SPELLING.—Oral spelling, terms, rules, and derivations.
GRAMMAR—Syntax, and analysis.
ARITHMETIC—Compound numbers, percentage and its applications.
GEOGRAPHY—Finish and review.
HISTORY—Complete administrations.
BOOKKEEPING.—Practical exercises.
SCIENCE—See "Observation Work."
DRAWING—See "Form Study and Drawing."

READING.

Fifth reader finished and reviewed. For suggestions, see seventh year.

SPELLING.

NOTE.—Carefully read what is said at the head of spelling for fifth year and seventh year. The work given below should be taught only in 1895-6, and each alternate year thereafter.

FIRST MONTH.

1. Define letter, vowel, consonant. Name of a letter. Power of a letter. Uses of silent letters.

2. Give synonyms for the following words and illustrate their use in sentences. Use the dictionary in discriminating shades of thought. *Celebrated, celebrity, cessation, cheerful.*

3. Study pronunciation and diacritical markings of the following words: *flute, fog, forage, forehead, fossil, frontal, frontier, frontispiece, gaunt, genuine.*

4. Select and define a list of words in which *pend* (to hang) enters as a part; as, append, depend, suspend.

SECOND MONTH.

1. Define elementary sound, vocal, subvocal, aspirate. Cognate sounds.

2. Give synonyms: *civil, clamorous, clemency, commendable.*

3. Pronunciation and diacritical markings: *gladiolus, gondola, granary, gratis, grimace, grisly, half, hearth, heinous, heroine.*

4. Study words containing *fer* (to bring, to bear); as, confer, prefer, transfer.

THIRD MONTH.

1. Define diphthong, proper diphthong, improper diphthong or digraph, triphthong, improper triphthong or trigraph. Make a list of each.

2. Give synonyms: *competition, custom, dark, defective.*

3. Pronunciation and diacritical markings: *hiccough, horizon, hostage, hostile, idea, ignoramus, impious, indict, inquiry, jaguar.*

4. Study words containing *vene* (to come or go); as, convene, contravene, intervene.

FOURTH MONTH.

1. Rule for retaining final *e* on taking a suffix, with a large list of words to illustrate. Exceptions. Rule for dropping final *e* on taking a suffix, with a large list of words to illustrate.

2. Give synonyms: *delusion, destiny, disciple, edifice.*

3. Pronunciation and diacritical markings: *javelin, jocose, jugular, juvenile, kaleidoscope, lamentable, lapel, larynx, leisure, leper.*

4. Study words containing *flect* (to bend); as, deflect, inflect, reflect.

FIFTH MONTH.

1. Rule for doubling final consonant on taking a suffix, with a large list of words to illustrate. Exceptions. Rule for using single final consonant on taking a suffix, with a large list of words to illustrate. Exceptions.

2. Give synonyms: *enmity, enormous, entreaty, fabrication.*

3. Pronunciation and diacritical markings: *lichen, luxury, lyceum, masculine, massacre, matron, memoir, mercantile, mirage, museum.*

4. Study words containing *cede* (to go or come); as, precede, intercede, recede.

SIXTH MONTH.

1. Make a large list of words ending in *en* and divide them into two lists, one containing words in which *e* is sounded, and the other, those in which *e* is silent. Same with words ending in *el.*

2. Give synonyms: *feeble, flexible, fragrance, garrulous.*

3. Pronunciation and diacritical marks: *national, of, often, oxalis, palm, papyrus, parasol, parietal, patriot, patron.*

4. Study words containing *scribe* (to write); as, subscribe, circumscribe, describe.

SEVENTH MONTH.

1. Rule for changing *y* to *i* on taking a suffix, with a large list of words to illustrate. Exceptions.

2. Give synonyms: *gentle, honesty, ignorant, lawful.*

3. Pronunciation and diacritical markings: *peony, petit, pharynx, plait, porpoise, precedence, psalm, pyramidal, quay, recess.*

4. Study words containing *fuse* (to pour); as, infuse, transfuse, diffuse.

EIGHTH MONTH.

1. Letters as to form—capitals, small capitals, italics, small letters or lower case letters. Uses of each class, and how to indicate in written manuscript.

2. Give synonyms: *miserable, multitude, procession, remainder.*

3. Pronunciation and diacritical marks: *reptile, rinse, sacrifice, salmon, saleratus, scallop, sirup, sobriquet, spikenard, spinach.*

4. Study words containing *spect* (to look); as, inspect, expect, prospect.

GRAMMAR.

FIRST MONTH.

Nouns, Pronouns and Verbs.—Review cases of nouns and pronouns. Study declensions. Practice in readers. Review the whole of the verb. Conjugate a few irregular verbs with three unlike principal parts and note their uses. Practice making written synopses. Review the adverb.

SECOND MONTH.

Analysis of Sentences.—Review first month's work of last year. Analyze and diagram sentences. Study classification of, according to use. Search readers and text-book till classification is easy to pupils. Classify as to form. Study the complex sentence carefully. Subordinate propositions are joined to principal ones by relative pronouns, by subordinate conjunctions, and by conjunctive adverbs. Review classes of conjunctions.

THIRD MONTH.

Elements of Sentences.—Define subordinate element. Three classes of modifiers—objective, adjective, and adverbial. Independent elements. Classify elements found in a reading lesson into these and learn definitions. Be careful to study all the text-book says about modifiers. Find three kinds in each of the above divisions, viz.: elements of the first, second, and third classes, or words, phrases, and clauses. Define phrase and clause. Classify phrases into substantive (subject, predicate, or object), adjective, and adverbial. Study all these and classify phrases in reading lesson. Separate clauses into principal and subordinate. Study subordinate clauses as substantive (subject, predicate, or object), adjective (relative or appositive), interrogative, and adverbial clauses. Search readers for many illustrations.

FOURTH MONTH.

Structure of Elements.—Study elements as simple, complex, and compound. Compare and learn definitions, and classify elements in reading lesson. If the work proves difficult, go over it again. Study contracted sentences. Note the means by which brevity is secured and its purpose. Practice the expansion of contracted sentences found, and note the strength of expression secured by the contraction. Study abridged propositions in complex sentences, as above. Spend some time analyzing and placing in diagram sentences illustrating the various topics studied to date.

FIFTH MONTH.

Construction of Nouns and Verbs.—Study all rules and notes for construction of nouns; as, subject-nominative, predicate-nominative, possessive, objective, and absolute. Read all notes and learn rules, as they form a convenient method of remembering many grammatical principles. Same for pronoun, adjective, and verb. Teach correct forms where errors are apt to be made; as, in predicate-nominative, objective in apposition, objective form of interrogative pronoun, and of relative, position of preposition, "*number*" of pronouns and "*forms*" of verbs to agree with two or more subjects, etc.

SIXTH MONTH.

Analysis.—Study rules for construction of adverbs, prepositions, and conjunctions. Spend this month in analyzing, and writing in diagrams well selected sentences either from the grammar or reader. Have diagrams made neatly; all ruling and writing done with ink, on good paper. The list of words found in most grammars, used as different parts of speech, contains many of the most difficult constructions. It will repay careful study.

SEVENTH MONTH.

Punctuation.—Study punctuation on the following plan: Have pupils read carefully all the rules for the use of the comma, and the notes below, etc. When the class is called, have pupils bring the readers, and with the book open, endeavor to find and state a reason for the use of every comma found; same with semi-colon, colon, period, and all other marks. Same with figures of etymology, of syntax, and of rhetoric. Figures are studied best in poetry. Make a brief study of prosody, kinds of verse, stanza, poetic feet. Learn what is meant by *long*, *common*, and *short* meter.

EIGHTH MONTH.

Review.—Review work done in second, third, and fourth months. Review the chief rules in syntax. Analyze and place sentences in diagram. Use ink and rulers.

ARITHMETIC.

FIRST MONTH.

Percentage.—Definitions and illustrations should be thoroughly mastered. Study the written forms expressing per cent. Study the three general problems; 1. To find any per cent of a number; 2. To find what per cent one number is of another; 3. To find a number when some per cent of it is given. Solve many problems.

SECOND MONTH.

Applications of Percentage.—Profit and loss, commission, stocks, bonds, brokerage, taxes, and insurance. Do not forget that each topic in the applications of percentage has a set of terms of its own which must be learned thoroughly by each pupil. It is not enough that a child understands; he must learn and know after the subject is passed.

THIRD MONTH.

Interest.—Teach one method thoroughly to beginners. Older pupils who have one may profitably learn another. Study partial payments and learn the United States rule. Learn to write forms of notes, and a proper method of canceling them when paid. Also for noting the partial payments when made.

FOURTH MONTH.

Discount.—True discount, bank discount, commercial discount, compound interest, annual interest, general problems in simple interest.

FIFTH MONTH.

Exchange.—Draft, check, sight draft, time draft, foreign exchange. Learn definitions and write forms.

SIXTH MONTH.

Equation of Payments.—Equation of payments and review of percentage.

SEVENTH MONTH.

Ratio.—Learn terms and forms of expression. The terms of a ratio must be like numbers. Why? Do not fail to master this principle. Simple proportion, compound ratio, and compound proportion. Solve many problems in simple proportion.

EIGHTH MONTH.

Partnership.—Review the first principles of percentage and interest. Learn definitions of terms and statements of principles and processes.

ARITHMETIC—NINTH YEAR.

NOTE.—In some schools this part of arithmetic is deferred until pupils enter the High School; in others it is treated entirely in the algebra. It may be substituted in the higher course for the algebra.

FIRST MONTH.

Involution and Evolution.—Involution, definition, and illustration, expression of powers. Evolution, definition, and illustration, expression of roots. In raising to powers, observe, in numbers containing a single significant figure, where the powers of that figure are found. Also, that the powers of fractions, either common or decimal, are still fractions. Careful attention to these points will aid in understanding the rules for pointing into periods, when roots are to be extracted. Square root.

SECOND MONTH.

Cube Root.—Cube root, decimal and common fractions. Learn the general rule, exactly. Solve many problems.

THIRD MONTH.

Mensuration.—Planes, quadrilaterals, polygon, parallelogram, rectangle, square, rhomboid, rhombus, trapezoid, trapezium. Learn to draw figures and to define terms. Learn rules. Solve many problems. Triangles—right, obtuse, equilateral, isosceles, scalene, hypotenuse. Learn terms, definitions, and rules.

FOURTH MONTH.

The Circle and Sphere.—Circle—diameter, circumference, center, area, similar figures. Sphere—surface, center, diameter, circumference, volume, or contents. Learn terms, definitions, and rules. Draw figures. Similar solids—the cylinder, surfaces, bases, volume.

FIFTH MONTH.

The Cone, Prism, and Pyramid.—The cone—how formed, base, vertex, height, slant height, volume, frustum of cone. Prisms and pyramids—learn terms, and draw figures. Solve many problems.

SIXTH MONTH.

Review.—Review terms in simple numbers. Study notation thoroughly, also common fractions.

SEVENTH MONTH.

Review.—Review decimal fractions, learning all terms, rules, especial reason for pointing results. Review compound numbers, longitude and time. Study standard time as represented on railroad maps of the United States. Review factoring, greatest common divisor, and least common multiple.

EIGHTH MONTH.

Review.—Review percentage and its applications, learning definitions, principles, and rules. Forms of business paper and discounts. Review ratio, proportion, powers, and roots.

GEOGRAPHY.

FIRST MONTH.

Europe.—Study Europe in same way as North America.

SECOND MONTH.

Study British Islands, Norway and Sweden, Denmark, and Holland.

THIRD MONTH.

Study the German Empire, Austro-Hungary, and Russia.

FOURTH MONTH.

Study France, Belgium, Switzerland, Italy, The Balkan, Iberian and Grecian Peninsulas.

FIFTH MONTH.

Asia.—Study Asia as the preceding continents; pay special attention to Eastern and Southern Asia.

SIXTH MONTH.

Africa.—Study Africa as a continent, filling and learning the outline, and discover, if possible, hindrances to civilization and progress.

Oceanica.—Study Oceanica. Review such parts of this year's work as may be needed on account of absence, or other causes.

SEVENTH MONTH.

Relief.—Trace upon the globe and map of the world the principal mountain systems. Show that the continents are nowhere flat surfaces, but that the land is all made up of slopes; that the outline of a continent results from its relief form, and that an elevation or depression of a continent would change its outline. Show that the direction of rivers depends upon the general slope of the land, and not upon the location of isolated mountain ranges.

Climate.—Temperature. Effects of latitude; why warmer in equatorial regions than in polar? Reasons for greater heating power of vertical rays. Trace on outline map the Gulf Stream and learn its effects upon climate. Treat in similar way the Japan Current. Notice effects of winds. Effect of elevation. Why colder on a clear night than on a cloudy night? Moisture. Source of moisture in atmosphere; evaporation—how caused? Conditions favorable to evaporation; effect of temperature upon amount of vapor in atmosphere. Formation of dew, of clouds, of rain. Is a wind blowing from a warm to a

cold region becoming dry or moist? Why? One blowing from a cold to a warm region? Effect of mountain ranges upon the rainfall of adjoining countries; effect of distance from the sea; is a clear or cloudy night most favorable to the formation of dew? Why?

EIGHTH MONTH.

Winds.—If a foot-ball or bladder be partly filled with air and the air heated, will it expand or contract? Why does a balloon filled with hot air rise? If a door is opened into a heated room, will the air at the floor blow in or out? The air at the ceiling? Why? Will the air on the surface of the earth blow toward or away from a heated region? When will the wind blow from the sea toward the land? When from land toward the sea? Which will contain more moisture, a land or a sea breeze? Will the winds on the earth blow oftener toward the equator or toward the poles? Why? When will the wind from the Indian Ocean blow toward Asia? When toward Africa? When will the rainy season occur in Southern Asia? Why? From your knowledge of the winds and the relief forms of the continent, locate two places having exceptionally great rainfall. Locate two places having no rain and explain why.

Deserts.—What conditions of heat and moisture are essential to vegetable growth? What is a desert? How are deserts formed? What kind of soil is usually found in deserts? Locate the principal deserts and give reasons for the dryness of each. What is an oasis? How formed?

Vegetation.—From a knowledge of previous topics, locate on maps the regions where the most favorable conditions for vegetation exist. Study the vegetation of the different continents, with especial reference to those kinds which are useful to man for food, clothing, or shelter.

Minerals.—Locate in each continent the regions where the useful minerals are found, and tell how, and in what form, each one is obtained. Maps may be made showing mineral regions in the same way that the plant maps are made.

Adaptation to Man's Wants.—Study each continent with reference to its advantages for the abode of man—(*a*) with reference to food materials; (*b*) to materials for clothing; (*c*) for shelter; (*d*) to advantages for transportation and exchange of products.

Commerce and Manufactures.—Locate principal water routes of travel and commerce, including oceanic routes, navigable rivers, and canals. Locate the principal shipping ports of each country, and tell what products are sent out from and what are received at each port. Learn, from a gazetteer or other source, the most important facts connected with each of these places.

HISTORY.

FIRST MONTH.

Washington inaugurated president, amendments to the Constitution, legislation of the first Congress, the new cabinet, financial policy of Hamilton, Indian wars, seat of Government, Jay's Treaty, complications with France, Whiskey Insurrection, farewell address of Washington.

John Adams inaugurated, the war with France, Alien and Sedition Laws.

The inauguration of Jefferson, the purchase of Louisiana, the Tripolitan War and its results, the Northwest Territory, amendment to the Constitution, Burr's Conspiracy, the Embargo of 1807.

The inauguration of Madison. War of 1812–1815, causes of, campaigns, result. Indian troubles, result.

SECOND MONTH.

Inauguration of Monroe, the Missouri Compromise, purchase of Florida, the Monroe Doctrine, the settlement of the Northern boundary. Admission of Illinois.

HISTORY AND CIVIL GOVERNMENT OF ILLINOIS.

Explorations of, Indian inhabitants, first settlements, development. Government of according to State Constitution—Three departments, Legislative, Judicial, Executive.

Legislative—the General Assembly of Upper and Lower House. Upper House—one senator from each senatorial district, elected by the people for four years. Presiding officer. Powers and duties. Lower House—representatives elected by the people for two years, three from each senatorial district. Presiding officer. Powers and duties. Assembly meetings—time, place, and duration.

Judicial.—Supreme, Appellate, and Circuit Courts. Supreme—seven judges elected by the people for nine years Three clerks elected by the people for six years. Appellate—twelve judges appointed by the Supreme Court from among Circuit Judges. Four clerks of the Appellate elected for a term of six years. Circuit--thirty-nine Circuit Judges, outside of Cook county, elected by the people for a term of six years. Cook County Circuit governed by the legislature. Kinds of cases tried before each court. Powers and duties of officers of each court.

Executive—Officers elected by the People—Governor, Lieutenant Governor, Secretary of State, Auditor, Treasurer, Superintendent of Public Instruction, Attorney General, Trustees for University of Illinois.

Officers appointed by the Governor with the consent of the Legislature—Three Canal Commissioners, five Commissioners of Public Charity, three Penitentiary Commissioners, nineteen Justices of the Peace for Chicago, seven Members of the State Board of Health, Grain Inspectors, Notaries Public, three Railroad and Warehouse Commissioners, three Trustees for each of the State Institutions except the University of Illinois, a Stockyards Inspector at Chicago, East St. Louis, and Peoria, three Claims Commissioners, one Public Administrator for each county.

Appointed by the Governor alone—Commissioner of Deeds, Printer Expert, Adjutant General, Commissioned officers of State Militia. State the duties, terms, and salaries of the elected and appointed executive officers of the State.

COUNTY GOVERNMENT.

Legislative—Board of Supervisors, one from each town where the county is under township organization. Three Commissioners where the county is not under such organization. Length of term, meetings, powers, and duties.

Judicial—County and Probate Courts; officers, their powers and duties. Grand Jury—twenty-three men designated by the supervisors. Powers and duties. Petit Jury of the Circuit Court—twelve men designated by the supervisors. Petit Jury of the County Court—twelve men designated by the County Judge and County Clerk.

Executive Officers elected by the People—County Clerk, Circuit Clerk, Recorder, County Judge, Probate Judge, State's Attorney, Sheriff, Superintendent of Schools, Coroner. State the qualifications, length of term, salary, powers, and duties of each.

THIRD MONTH.

John Quincy Adams inaugurated, the Panama Congress and Monroe Doctrine, Georgia and the Creek Indians, economic questions, tariff of 1828.

Inauguration of Jackson, tariff and nullification (Art. II. Sec. 3), the Anti-Masonic movement, Black Hawk War, the Seminole War, the "Kitchen Cabinet," the United States Bank, Veto Power (Art. I. Sec. 7, Cl. 2), the anti-Slavery movement, the French Spoliation claims (Art. I. Sec. 8, Cl. 11).

Inauguration of Van Buren, the Subtreasury, the financial crisis of 1837, the repudiation movement, the affair of the Caroline.

Inauguration and death of Harrison. Inauguration of Tyler (Art. II. Sec. 1, Cl. 5). The Webster-Ashburton Treaty, the tariff of 1842, Dorr's Rebellion, the annexation of Texas in 1845 (Art. IV. Sec. 3, Cl. 1), and the Mormon troubles, are the events in our history between the years 1825 and 1846 which should be well mastered.

Literature for the third and fourth months will include Lewis and Clarke's *Journals;* Irving's *Astoria;* Fremont's *Explorations;* Reed's *Osceola;* Lowell's *Bigelow Papers; The Liberator; Uncle Tom's Cabin; Orations* of Webster, Clay, and Hayne. Whittier's *Angels of Buena Vista.*

FOURTH MONTH.

Polk inaugurated, Mexican War—cause, campaigns, result, treaty. The Northwest boundary, "fifty-four forty or fight," tariff of 1846, the Wilmot Proviso.

Taylor inaugurated, death, the succession of Fillmore. The Omnibus Bill of 1850, the Free-Soil party,—its declaration of principles, the fugitive slave law (Art. IV. Sec. 2, Cl. 3). The correspondence of Webster and Hulseman.

Inauguration of Pierce, the Kansas-Nebraska bill, the Know-Nothing party, the Gadsden purchase, diplomatic relations with Great Britain, the Ostend Manifesto.

Buchanan inaugurated, the Dred Scott Decision, personal liberty bills, Mormons in Utah, campaigns of Douglas and Lincoln, acts of Secession, John Brown's Raid.

FIFTH MONTH.

Lincoln's administration (1861–1865). What party came into power? Give sketch of Lincoln. Civil War. Cause: (*a*) State's Rights, (Webster, Calhoun); (*b*) Slavery; (*c*) John Brown's Raid; (*d*) Election of Lincoln; (*e*) Firing on Fort Sumter. Study war to 1863.

Outline of the Civil War.

The following outline of the Civil War will be found useful. Show that every battle fought was to accomplish one of the following points:

1. To Preserve Doubtful States, 1861–2: West Virginia: Philippi, Cheat Mountain. Kentucky: Belmont, Fort Henry, Fort Donelson, Perryville. Missouri: Carthage (Sigel), Wilson's Creek (Lyon), Lexington (Fremont), Pea Ridge (Curtis).

2. To Open the Mississippi, 1861–2–3: Belmont, Fort Henry, Fort Donelson, Forts St. Philip and Jackson, Shiloh or Pittsburg Landing, Corinth, Iuka, Vicksburg (Grant). Results: Island No. 10, Fort Pillow, Memphis.

3. To Pierce the Center, 1863–4–5: Chickamauga, Chattanooga, Atlanta. Causative: Dalton, Resaca, Dallas, Lost Mountain, Kenesaw Mountain, Nashville, "March to the Sea," "Through the Carolinas."

4. To Close Southern Ports, 1861-2-3-4: North Carolina Forts, Port Royal Entrance, Roanoke Island, Fort Pickens, Fortress Monroe (Monitor), Charleston, Savannah, Mobile, Wilmington.

5. To Capture Richmond, 1862-3-4-5: Peninsular Campaign (Seven days' battle), Fredericksburg (Burnside), Chancellorsville (Hooker), Cold Harbor, Winchester (Sheridan's Ride), Petersburg, and Richmond (Grant).

6. To Defend Washington, 1861-2-3: Bull Run (McDowell), Second Battle of Bull Run (Pope), Antietam (McClellan), Gettysburg (Meade).

SIXTH MONTH.

Emancipation Proclamation, Chancellorsville, Gettysburg, Gen. Meade, Vicksburg, Morgan's Raid, Port Hudson, Riot in New York, Chickamauga, Lookout Mountain, Siege of Charleston, 1864—Sherman's Advance, Franklin and Nashville, March to the Sea, Wilderness, Spottsylvania, Cold Harbor, Early's Raid, Sheridan's Campaign, Winchester, "Sheridan's Ride," Mobile, Fort Fisher, the Alabama, Sherman in the Carolinas, Surrender of Charleston. Note geography, sketching rapidly. The table in preceding month will show the general purpose of each.

Foreign Relations—Trent affair, Alabama. War Measures—Greenbacks, Conscription Act (Riot N. Y.), Emancipation Proclamation. Raids—Sheridan, Early, Stoneman, Morgan, Forrest. Commissions—Sanitary, Christian. Prominent Men—1. Generals: Name five prominent generals on each side; also the prominent commanders killed in this war. 2. Civilians: Seward, Stanton, Chase, Sumner, Phillips, Garrison, Greeley, Beecher, War Governors. Turning points—July 1, 2, 3, 4. 1863. Cost—Number of men enlisted, killed, wounded. Cost in money. Review—Trace the career of the following officers: Grant, Sherman, Farragut, Lee. Results—State Rights, 13th, 14th, and 15th Amendments.

Policy of Lincoln toward the seceded states. The Sanitary Commission. The assassination of Lincoln.

Inauguration of Andrew Johnson, the Freedman's Bureau, reconstruction, Tenure of Office bill. impeachment of President, purchase of Alaska, cause of purchase, value, and constitutional amendments are the chief points of importance in the history of this period. Study the war by campaigns and locate movements on the map.

Literature for this period will include the *Memoirs* of Sherman and Grant; Coffin's *Days and Nights on the Battle Field*, Whittier's *In War Time*, and *Barbara Frietchie;* Coffin's *Boys of '61.*

SEVENTH MONTH.

Grant inaugurated, Santa Domingo Treaty, the Geneva Congress in 1872, Pacific Railroad, Indian troubles, Credit Mobilier, the Centennial Exposition.

Hayes, the Electoral commission, inauguration, Bland Silver Bill, resumption of specie payments, fishery award, treaty with China.

Garfield inaugurated, Star Route Frauds, assassination of Garfield and accession of Arthur, Civil Service Bill.

Cleveland first inaugurated, Presidential succession, labor troubles, earthquakes.

Harrison inaugurated, McKinley Bill.

Cleveland's second inauguration, current events.

Include in the literature for this period Whittier's *Custer's Last Charge;* Mrs. Custer's *Boots and Saddles.*

The literature for the administrations may include:—

Washington's administration—Thompson's *Green Mountain Boys;* Shaler's *Kentucky;* Sparks' *Boone.* Adams' administration—*Letters of John Adams and Wife.* Jefferson's administration—Mrs. Stowe's *Minister's Wooing.* Madison's administration—Gay's *Madison.* Monroe's administration—Kennedy's *Swallow Barn.* J. Q. Adams' administration—Morse and Seward's *J. Q. Adams.* Jackson's administration—Whittier's *Voices of Freedom.* Polk's administration—Royce's *California.* Buchanan's administration—Whittier's *Brown of Osawatomie,* Stedman's *How Old Brown Took Harper's Ferry.* Lincoln's administration—Mrs. Howe's *Battle Hymn; Century Magazine* for 1884, 1885, 1886; Lowell's *Among My Books.* Grant's administration—Tourgee's *A Fool's Errand,* and *Bricks Without Straw.*

EIGHTH MONTH.

PERIODS OF DISCOVERY, EXPLORATION, AND COLONIZATION.—Review periods by given outline.

Tell who the following were, for what they were noted, and with what events they were connected: Amerigo, Abercrombie, Andros, Bacon, Balboa, Baltimore, Braddock, Bradford, Cabot, Cabrillo, Calvert, Canonicus, Cartier, Carver, Champlain, Clayborne, Cortes, Coronado, Davenport, De Gama, De Leon, De Soto, Dieskau, Drake, Eaton, Eliot, Franklin, Gilbert, Gorges, Gosnold, Harvard, Hudson, Joliet, Kidd, La Salle, Locke, Mason, Marquette, Magellan, Marco Polo, Massasoit, May, Montezuma, Montgomery, Narvaez, Oglethorpe, Penn, Philip, Pitt, Pocahontas, Pontiac, Powhatan, Raleigh, Robinson, Rolfe, Samoset, Smith, Stuyvesant, White, Williams, Winthrop, Wolfe.

Tell where the following are, and with what events they were connected: Acadia, Albany, Boston, Carolina, California, Cambridge, Cape Cod, Charleston, Deerfield, Detroit, Duquesne, Dover, Delft Haven, Elizabethtown, Fort Wm. Henry, Germantown, Great Meadows, Hartford, Haverhill, Jamestown, Kennebec River, Louisburg, Leyden, Mississippi River, New Albion, New Haven, New Amsterdam, Monongahela River, Oswego, Fort Pitt, Plymouth, Palos, Portsmouth, Port Royal, Princeton, Providence, Quebec, Roanoke, St. Augustine, St. Mary's, Salem, Santa Fe, Savannah, Saybrook, Schenectady, Ticonderoga, Vineland, Wilmington.

REVOLUTIONARY PERIOD.—*Tell who the following were, with what events connected, and for what they were noted:* J. Adams, S. Adams, Allen, Andre, Arnold, Baum, Barton, Burgoyne, Clinton, Clark, Cornwallis, Conway, De Estaing, De Kalb, De Grasse, Franklin, Gage, Gates, Greene, Hale, Hamilton, Henry, Herkimer, Howe, Hayne, Hancock, Jasper, Jay, Jefferson, Jones, Kosciusko, Knox, Lafayette, Ledyard, Lee, R. H. Lee, Lincoln, Livingston, McCrea, Marion, Madison, Mercer, Montgomery, Morgan, Morris, Moultrie, Otis, Oliver, Paulding, Percy, Pickens, Pitcairn, Pitt, Prescott, Pulaski, Putnam, Pearson, Randolph, Rawdon, Rochambeau, St. Clair, St. Leger, Schuyler, Sherman, Stark, Steuben, Sumter, Sullivan, Shay, Tallmadge, Trumbull, Tarleton, Van Wart, Wayne, Ward, Warren, Warner, Williams.

Tell where the following are located, and with what events they were connected: Annapolis, Augusta, Baltimore, Bennington, Bemis Heights, Boston, Breed's Hill, Brooklyn, Brandywine, Cambridge, Camden, Chad's Ford, Charleston, Cherry Valley, Concord, Cowpens, Lake Champlain, Crown Point, Chemung River, Detroit, Dorchester Heights, Eutaw Springs, Faneuil Hall, Flamboro Head, Fort Moultrie, Fort Washington, Guilford Courthouse, Germantown, Griswold, Gloucester, Hubbardton, Harlem Heights, Hobkirk's Hill, Kaskaskia, King's Mountain, Kennebec River, Lexington, Long Island, Lancaster, Monmouth, Morristown, Montreal, Mohawk River, Mt. Vernon, Newport, New York, Narragansett Bay, New London, Newburg, Oriskany, Paoli, Princeton, Philadelphia, Paris, Quebec, Richmond, Saratoga, Savannah, Stony Point, St. John's, Sullivan's Island, Stillwater, Sunbury, St. Croix River, Ft. Schuyler, Staten Island, Ticonderoga, Trenton, Valley Forge, Vincennes, White Plains, West Point, Wyoming, York, Yorktown.

CONSTITUTIONAL PERIOD.—*Tell who the following were, for what they were noted, and with what events they were connected:* Astor, Black Hawk, Blennerhassett, Boone, Gen. Brown, John Brown, Burr, Calhoun, Clay, Clarke, Clinton, Crogan, Decatur, Dorr, Field, Fremont, Fulton, Gadsden, Garrison, Genet, Gray, Hamilton, Hayne, Houston, Gen. Hull, Capt. Hull, Jay, Kearney, Knox, Lawrence, Lafayette, Lewis, Livingston, Macdonough, Marshall, Morse, Miller, Osceola, Pakenham, Capt. Perry, Com. Perry, Pike, Pinckney, Porter, Quincy, E. Randolph, J. Randolph, Ross, Santa Anna, Scott, Smith, Tecumseh, Wayne, Webster, Wilmot, Whitney.

Tell where the following are located, and with what events they are connected: Astoria, Baltimore, Buena Vista, Cerro Gordo, Lake Champlain, Chippewa, Cumberland, Detroit, Fort Erie, Fort McHenry, Fort Meigs, Greenville, Guadalupe, Ghent, Hartford, Jalapa, Lundy's Lane, Marietta, Messilla, Metamoras, Mobile, Monterey, Mexico, New York, New Orleans, Nueces River, North Point, Okeechobee, Palo Alto, Pensacola, Philadelphia, Pittsburgh, Plattsburgh, Puebla, Queenstown, Resaca, Richmond, Rio Grande, Sackett's Harbor, Santa Fe, Sacramento, San Francisco, Tippecanoe, Trenton, Tripoli, Vera Cruz, Washington, York.

PERIOD OF THE CIVIL WAR AND RECONSTRUCTION.—*Tell who the following were, for what they were noted, and with what events they were connected:* Anderson, Banks, John Bell, Booth, Bragg, John Brown, Buell, Burnside, Butler, Blaine, Custer, Davis, Douglas, Dred Scott, Early, Farragut, Fremont, Foote, Grant, Greeley, Hooker, Hood, Hancock, Jackson, Lincoln, Lee, Lesseps, Lyon, McClellan, McDowell, Mason, Meade, Pope, Porter, Rosecrans, Sheridan, Schofield, Scott, Seward, Slidell, Stanton, Semmes, Sherman, Thomas, Tilden, Whitman, Wilkes, Winslow.

Tell where the following are, and with what events they were connected: Antietam, Appomattox, Atlanta, Baltimore, Bedloe's Island, Booneville, Bull Run, Chambersburg, Chancellorsville, Charleston, Chattanooga, Columbia,

Corinth, Fort Donelson, Elberon, Five Forks, Fredericksburg, Franklin, Geneva, Gettysburg, Harper's Ferry, Havana, Fort Henry, Hampton Roads, Iuka, Knoxville, Lexington, Montgomery, Memphis, Murfreesboro, Mobile Bay, Fort Macgregor, Fort McAllister, New York, New Orleans, Norfolk, Nashville, Petersburg, Fort Pillow, Port Hudson, Richmond, Shenandoah Valley, Fort Sumter, Shiloh, South Mountain, Savannah, Vancouver's Island, Vicksburg, Wilderness, Williamsburg, Winchester, Yorktown.

BOOKKEEPING.

In country or village schools, it would be wise, and meet with popular approval, to teach the subject of bookkeeping. It would be best that it be taught in single entry only, and that one form be given.

It is essential that the subject be thoroughly taught in order that the future study of the science of accounts, as a science, may be pursued intelligently. It has become necessary in this age of commercial activity that every man be his own bookkeeper, or able at least to examine intelligently the records of his clerks and bookkeepers. It is the province of the schools to fit the pupils for this work.

In the fourth year, exercises should be given that will make the children familiar with and able to execute such business forms as bills for work done, bills for goods purchased.

In the fifth year, the work of the fourth should be continued, and bills of sale, notes, drafts, and receipts should be introduced. Place these forms on the blackboard and have the pupils copy them, making the necessary rulings. Accept no work which is not executed with neatness and care. Give these exercises at least once each week in connection with arithmetic.

It would be a most excellent practice to use flat cap paper, requiring the pupils to do all the work of ruling it in appropriate colors. Drill work of this character should be continued, in connection with arithmetic, to the eighth year, when three months should be given to single entry bookkeeping. The winter term is suggested as being most desirable. The first month's work should be in the line of cash accounts, rules for balancing, keeping family expense accounts, clerks' accounts, harness makers', farmers', etc. The second month should be devoted to teaching how to make blotter and daybook entries. Require that all work be neatly done.

The third month should be devoted to posting these accounts to the ledger and making statements of resources and liabilities. It will be well not to attempt too much. One form mastered will properly equip students for all ordinary demands.

HIGHER COURSE OF STUDY.

This course is recommended for advanced country schools and for the smaller graded schools. Where but few teachers are employed, it is impossible to carry the work of the more extended courses. But by following the plan of alternation of work as recommended on pages 6 and 7 of this Course, it is believed that these smaller graded schools can not only do the work of two years here outlined, but can also add a third year for graduation.

FIRST YEAR.

TEXT-BOOKS—General History, Advanced Arithmetic or Algebra, Physiology, Botany, and Bookkeeping.
GENERAL HISTORY—History of Ancient Peoples.
ARITHMETIC OR ALGEBRA—See note at head of "Algebra". See ninth year arithmetic, page 58.
PHYSIOLOGY—Physiology completed.
BOTANY AND BOOKKEEPING—See note at head of "Botany and Bookkeeping."

GENERAL HISTORY.

NOTE.—To understand history, the geography should be thoroughly learned. The teacher should not fail to have maps carefully studied.

FIRST MONTH.

History, definition, scope, divisions. The historic race, Aryans, Semites, Hamites. Egypt, Old Empire, Middle Empire, New Empire, decline of Egypt, civilization, king, priests, soldiery, common people, hieroglyphics, literature, monuments, industries, religion, embalming, everyday life.

SECOND MONTH.

Babylonia and Assyria, Chaldea, Nineveh and its conquering kings, society, manner of writing, literature, monuments, walls, temples, hanging gardens of Babylon, character of people, religion, scenes from life. Phœnicia, settlements, Carthage, literature, arts and inventions, religion, Baal and Moloch.

THIRD MONTH.

Judea, Jews, Abraham, Joseph, Moses, the exodus, conquest and occupation of Palestine, the kingdom of David, its divisions, idolatry introduced, the captivity, the restoration, religion and learning, the Hittites. Media and Persia, Cyrus, Cambyses, Darius, Persian society, writing, Zoroaster, education of Persians, monuments and arts, character and customs, religion, Magi, the army. India, Hindoos, society, literature, the Sanscrit, Brahminism, Buddhism. China, the great wall, why built, Genghis Khan, Marco Polo, civilization, literature, religions. Greece, geographical features, early inhabitants, Hellenes, legendary history, government, Dorian migration, colonies, Sparta, Lycurgus.

FOURTH MONTH.

Athens, early history, Draco, Solon, the tyrants, democracy. Cause of Persian wars, Marathon, Miltiades, Themistocles and Aristides, Xerxes, Thermopylæ, Leonidas, Salamis, Platæa, Mardonius, Pausanias, Mycale, Pericles, Cimon, the long walls. Peloponnesian war, causes, siege of Platæa, Alcibiades, expedition to Sicily, fall of Athens, the thirty tyrants, retreat of the ten thousand, Spartan and Theban rule, Agesilaus, Epaminondas. Macedonia, its people, Philip, Demosthenes, Chæronea, Alexander, conquests, Granicus, Issus, Tyre, Egypt, Arbela, Babylon, results. Successors, Ptolemy, Lysimachus, Seleucus, Cassander.

FIFTH MONTH.

Greek civilization, society, classes in Sparta, Greek literature, poetry and history, Homer, Hesiod, Pindar, Sophocles, Euripides, Xenophon, Thucydides, Herodotus, Pythagoras, Socrates, Plato. Schools of philosophy, Academic, Peripatetic, Epicurean, Stoics. Libraries, education in Athens, education in Sparta. Architecture, Doric, Ionic, Corinthian. Religion and Mythology, festivals, marriage customs, burial, weapons, life scenes.

SIXTH MONTH.

Rome, founding, early inhabitants of Italy, the Latins, Etruscans, Alba Longa, government of Rome, Sabine invasion, Tarquins, the republic. Patricians and Plebeians, secession of the Plebs, agrarian law, the decemvirs, twelve tables, Gallic invasion, Cincinnatus, Pyrrhus. Punic wars, Carthage, Hiero, Regulus, Sicily, Hannibal, Fabius, Cannæ, Scipio, Rome conquering Greece, Syria, Spain, effect of conquest on Roman people.

SEVENTH MONTH.

Civil wars, the Gracchi, Jugurtha, Cimbri and Teutons, Mithridatic wars, Sulla, Marius, Cinna, Gladiatorial war, Catiline's conspiracy, the triumvirate, war between Cæsar and Pompey, assassination of Cæsar, second triumvirate, Philippi, Cleopatra, war between Antony and Octavius. The empire, the Germans, Varus, birth of Christ, Tiberius, Caligula, Nero, Vespasian, Titus, Domitian, the good emperors, decline of the empire, inroads of the barbarians, fall of the empire. Roman civilization, society, army, literature, Virgil, Horace, Cicero, Livy, Seneca, education, monuments and art.

EIGHTH MONTH.

Roman character, religion, games and festivals, gladiators, marriage, burial, dress, a day in Rome, a Roman house, the house of Pansa, a triumph, funeral honors to an emperor. Review work gone over. Pay special attention to the geography, locating important places, countries, towns, and rivers.

ALGEBRA.

FIRST MONTH.

Literal Quantities.—Ideas and expression; symbols and signs; coefficients and exponents; numerical quantities; literal quantities; positive and negative quantities. Addition; arithmetical sum; algebraic sum; monomial; binomial; polynomial; similar terms; dissimilar terms; arithmetical difference; algebraic difference; subtraction.

SECOND MONTH.

Multiplication and Division.—Multiplication; expression of products; exponents; signs; rule for signs; definition of terms in multiplication; arithmetical product; algebraic product. Division signs and rules for signs; exponent zero; arithmetical division; algebraic division; definition of terms;

division of monomials; division by monomials; division by polynomials. Definition of equation, member, a known quantity, unknown quantity, axioms, solving equations, verifying equations.

THIRD MONTH.

Complete addition of all forms of polynomials; also of subtraction. Study symbols of aggregation, especially when preceded by the minus sign. Do not forget that the horizontal line between the numerator and denominator of a common fraction is a symbol of aggregation. Complete multiplication and division of polynomials. Study simple, simultaneous, independent equations; elimination; elimination by addition or subtraction. Involution, power, degree, exponent, even powers, negative powers.

FOURTH MONTH.

Factors.—Composite quantity, and prime; the product of an even number of factors; of an odd number; square of a binomial; product of the sum and difference of two numbers; factoring a polynomial; factoring difference of squares; the sum or difference of equal odd powers of two quantities; a trinomial. Highest common divisor. Lowest common multiple.

FIFTH MONTH.

Fractions.—Arithmetical and algebraic fractions; value; apparent sign; integral and mixed quantities Proper, improper, and compound fractions; reciprocal. Reduction; definition; methods; principles; changing signs of terms. Reduction of fractions to lowest terms; mixed numbers to improper fractions; improper fractions to integral or mixed forms; fractions to similar forms. Addition, subtraction, multiplication, and division of fractions; complex fractions, and involution of fractions.

SIXTH MONTH.

Equations.—Numerical, literal, simple, quadratic equations; transformation of equations; transposition; clearing of fractions; solution of equations; problems; statements. Solve many equations and problems. Be careful to make full and clear written statements of all the conditions of a problem before attempting to form the equation.

SEVENTH MONTH.

Elimination.—Study elimination by substitution; by comparison; solution of literal equations; study general problems. If the students do not become as familiar with general problems as with special ones, as familiar with the literal notation as with the numerical, then you may be sure the algebraic work is not complete.

EIGHTH MONTH.

Review.—Learn definitions, solutions, rules, and principles thoroughly. Do not be content with an understanding at the time of recitation, but fix all algebraic knowledge as firmly in the mind as the alphabet. This is the only sure test of mathematical teaching.

PHYSIOLOGY.

FIRST MONTH.

Bones, uses and forms, composition, structure, growth, repair, of head, of trunk, perfection of the spine. How the skull articulates; ribs; bones of the upper and lower limbs. Give special attention to structure of hand. Diseases and deformities of bones. Muscles, use, contractility, arrangements, kinds, structure, tendons.

SECOND MONTH.

Muscular sense, exercise, necessity for, time, kinds of, diseases of muscle. Skin, structure, complexion. Hair. Nails. Mucous membrane, structure, fat. Teeth, kinds, structure, diseases of, preservation of. Oil and perspiratory glands, perspiration. Hygiene of skin, bathing, diseases of skin.

THIRD MONTH.

Organs of the voice, larynx, vocal cords, speech, vocal sounds. Organs of respiration, structure of. Capacity of lungs. Need of air. Action of air in lungs. Ventilation, necessity for. How ventilate. Diseases of organs of respiration. Blood, composition and uses, coagulation. Heart, movements and structure.

FOURTH MONTH.

Arteries, veins, capillaries, structure compared. Circulation, lesser, greater. Heat of body, distribution, and regulation of. Lymphatic circulation. Diseases of circulation, congestion, inflammation, bleeding. Alcohol, how made, varieties and properties of, destructive to animal and plant life. Effects of, upon circulation, heat, membranes, blood, lungs.

FIFTH MONTH.

Food, necessity for, does what, kinds needed. Digestion, object of, general plan of. Mastication and insalivation. Gastric digestion. Intestinal digestion. Absorption. Food, kinds of considered. Coffee and tea. Cooking. Quantity and kinds of food under different conditions. Diseases of digestive organs. Alcohol, relation to digestion, effects upon liver, kidneys. Does alcohol impart heat and strength? Alcohol appetite.

SIXTH MONTH.

Nervous system, structure of brain, cerebrum, cerebellum, spinal cord, nerves, spinal, cranial. Sympathetic system, crossing of cords, reflex action, brain, exercise necessary, sleep necessary, sunlight. Alcohol, effects upon nervous system, four stages of, upon brain, influence upon mental and moral powers. Tobacco, physiological effects of, influence upon youth.

SEVENTH MONTH,

Special senses. Touch, description, uses. Taste, uses of. Smell, structure of organ, uses. Hearing, structure of ear. Sight, structure of eye. Care of eyes and ears. Value of health. Disease, prevention of, cure of. Arrangement and care of sick room.

EIGHTH MONTH.

What to do in emergencies; as, burns, cuts, wounds, nose bleed, sprains, cholera morbus, croup, fits, concussion of brain, choking, sunstroke, drowning. Antidotes to poisons. Reviews.

BOTANY AND BOOKKEEPING.

NOTE.—It is believed that these two studies can be taken in one year, by taking botany two months in the fall, then bookkeeping four months in the winter, and resuming botany two months in the spring. This plan has been tried successfully in many schools.

FIRST MONTH.

Botany, definition, a pattern plant, seedlings, embryo, cotyledons, radicle, plumule. Buds, axillary, terminal, scaly, naked, accessory, arrangement. Roots, primary, secondary, fibrous, fleshy, conical, napiform, fusiform, aerial, epiphytes, parasites. Annuals, biennials, perennials, stems, herbs, shrubs,

trees, climbing, twining, culm, caudex, sucker, stolon, offset, runner, tendrils, spines, subterranean stems, rhizoma, tuber, corm, bulb.

SECOND MONTH.

Leaves, blade, petiole, stipules, parenchyma, veins, epidermis, venation, parallel veined, netted-veined, palmately-veined, radiate-veined. General forms of leaves, of apex, of base, outlines of margins, mode of lob'ng, compound leaves, unifoliate, bifoliate, trifoliate, perfoliate, equitant, phyllodia. Uses of leaves, storage of food, as bud scales for protection, as spines, for climbing, as pitchers, as traps. Stipules, phyllotaxy, alternate, opposite, whorled. Vernation.

THIRD MONTH.

Bookkeeping, cash accounts, account of boy at school, cash account in small businesses. The balance of the cash account should show the amount on hand at any time. Personal accounts, debit and credit, simple accounts with persons in ordinary business and trades.

FOURTH MONTH.

Personal accounts continued for practice and to fix correct ideas of what an account is. Find what the difference between the two sides of a personal account shows. Gain and loss accounts, accounts kept with a small business; as, a field of wheat, a field of corn, a farm, etc. Get an exact notion of the real meaning of an account of this kind.

FIFTH MONTH.

Continue gain and loss accounts. Compare the three kinds of accounts, and fix carefully the exact meaning of each and the results obtained from each. Financial statements and papers. Write notes, checks, receipts, drafts, and make out bills. Write up accounts and draw off statements of the condition of the business. Forms will be found in most text-books.

SIXTH MONTH.

Auxiliary books, day book, bill book, sales book, journal, and ledger. Double entry. Develop true idea of journalizing; of posting. Show exactly why each book is kept. Write up memoranda of business transacted in all books and deduce results. In text-book used, learn carefully statements of definitions and principles.

SEVENTH MONTH.

During the spring, analyze and mount twenty-five plants, following directions in Gray's *School and Field Book of Botany*.

Botany resumed. Flowers, inflorescence, peduncle, pedicel, rhachis, bract, raceme, corymb, umbel, spike, head, catkin. Floral envelopes, calyx, corolla, essential organs, stamens, pistils, plan of flower, flowers altered branches, parts of a flower altered leaves, modifications of type flower, perfect, imperfect, etc., by union of parts, by consolidation of parts, arrangement of parts in the bud. Arrangement and modifications of stamens, of anthers. Pollen, pistil, ovary, style, stigma, naked seeded, ovules, receptacle, fertilization, the fruit.

EIGHTH MONTH.

Anatomy of seeds, seed-coats, hilum, kernel, embryo, radicle, cotyledons, definition of growth, protoplasm, cells, cell-walls, cellular tissue. Wood and wood-cells, ducts, cell contents, chlorophyll, starch, crystals, analogy of. Roots and stems, endogenous, exogenous, bark, inner bark, green bark, corky layer, wood, sap-wood, heart-wood, the living parts of a tree. Anatomy of leaves, epidermis, stomata. Food of plants. Plant work and movement. Cryptogamous plants. Classification of plants.

SECOND YEAR.

TEXT-BOOKS—General History, Algebra, Zoology, Philosophy.
GENERAL HISTORY—Medieval and Modern Peoples.
ALGEBRA—Begin with powers and roots and complete the text.
ZOOLOGY—A general study of the animal kingdom.
PHILOSOPHY—A study of leading principles and topics.

GENERAL HISTORY.

NOTE.—In this year's work, the geographical features of Europe and Asia should be thoroughly studied during the different epochs. In the breaking up of tribes and nations, the boundaries of governments and provinces change so often that one is soon bewildered and lost in a mass of names and details, unless great care is exercised in firmly locating important places and boundaries of countries. Study maps constantly.

FIRST MONTH.

The Middle Ages, period, divisions, a new era, Teutonic settlements, Byzantine Empire, Lombards, the papacy. German civilization, men, women, home, government, religion, arts and letters. The Saracens, Mohammed, Caliphs, invasion of Europe, Charles Martel and Charlemagne. The Franks, Clovis, Charlemagne crowned emperor. England, Roman conquest, Anglo-Saxon conquest, Danish and Norman conquests, Magna Charta. Conquest of Ireland, Wales, and Scotland. English civilization, government, ordeals, literature, home, dress, sports.

SECOND MONTH.

France, Norsemen, Carlovingian Line, Capetian Line, House of Valois, Hundred-Years war, Crecy, Calais, the black death, Poitiers, King John, Black Prince, Azincourt, Joan of Arc, absolutism. French civilization, the Gauls. Germany, Saxon, dynasty, the Magyars, the Holy Roman Empire, the Franconian dynasty, Hildebrand, Investiture, the Hohenstaufen Line, the peasants, the Feme, cities, the Hapsburg Line, Council of Constance, John Huss, House of Hohenzollern. Switzerland, Morganten, Sempach.

THIRD MONTH.

Italy, Guelf and Ghibelline, power of the popes, Italian cities, Florence, Venice, Pisa, Genoa, the Medici. The crusades, origin, first crusade, Godfrey, Saladin and Richard, capture of Constantinople, the last of the crusades, Saint Louis, effects of crusades. The Moors in Spain. Asia, Mongols, Genghis Khan, Tamerlane, the Turks, capture of Constantinople by the Turks. Medieval civilization, feudalism, ceremonies, the castle, chivalry, the knight, arms and armor, education and literature, the guilds, dress and food.

FOURTH MONTH.

The Modern Era, causes of change, crusades, gunpowder, printing, maritime discoveries, Columbus, Mexico, Peru. The French in Italy, Charles V, Francis I, Henry VIII, the field of the cloth of gold, Pavia, sack of Rome. The reformation, Luther, diet at Worms, Wartburg, Smalcaldic League and war, Treaty of Passau, abdication of Charles, the Dutch Republic, Alva, William of Orange, Forty-Years war, results. France, religious wars, Vaudois, Natharine de Medici, Coligny, Guises, Massacre of St. Bartholomew, Henry of Cavarre, Edict of Nantes, Sully, Ravaillac.

FIFTH MONTH.

England, the Tudors, Henry VIII, Wolsey, Catherine, Anne Boleyn, the Reformation, church reform, Mary, Elizabeth, Mary Queen of Scots, the Armada, Essex. Progress of civilization, commerce, art, literature. Roger Ascham, Shakespeare, Bacon, Spenser, Jonson, science, home life in England, mansions, furniture, dress, food. German life, the rich, traveling student. The Thirty-Years war, causes, beginning, Gustavus Adolphus, Tilly, Wallenstein, Lutzen, Peace of Westphalia. Richelieu, Louis XIV, Mazarin, Colbert, persecution of the Huguenots, war with Flanders, war with Holland, war of the Spanish Succession.

SIXTH MONTH.

England, the Stuarts, James I, Gunpowder Plot, Charles I, Parliament and the King, ship money, John Hampden, Laud, Long Parliament, Civil war, Marston Moore, Naseby, execution of Charles, the commonwealth, Dunbar, Worcester, the Protectorate, the Friends, Fox, Penn, Richard Cromwell, the Restoration, the Plague, the Great Fire, plots, Titus Oates, James II, Revolution of 1688, William III, Anne. Civilization, literature, philosophy, science, art, Louis XIV, court etiquette, palace at Versailles, the court. Russia, Peter the Great, Charles XII.

SEVENTH MONTH.

Rise of Prussia, Frederick William, Frederick the Great, Maria Theresa, Seven-Years war, result. England, House of Hanover, George I, Walpole; Pitt, Wesley, George III. French Revolution, condition of the people of France, abolition of the monarchy, the Bastile, reforms, execution of Louis XVI and Marie Antoinette, the Reign of Terror, the Jacobins, Marat, Charlotte Corday, Robespierre, the reaction, the Directory, Napoleon, the day of the Sections, Italian campaign, Lodi, Arcole, Expedition to Egypt, the republic, three consuls. Literature in England, invention.

EIGHTH MONTH.

France, Austrian war, Napoleon emperor, Josephine, Austerlitz, Trafalgar, war with Prussia, war with Russia, war with Spain and Portugal, abdication of Napoleon, Elba, Louis XVIII, Napoleon's return, Waterloo, Wellington, second abdication, St. Helena, second restoration of Louis XVIII, Charles X, House of Orleans, Revolution of 1848, second republic, second empire, Sedan, Paris, third republic. England. Germany, Bismarck, German Union. Italy, Garibaldi, Victor Emanuel, Italy united. Turkey, Greece, Netherlands, Japan.

ALGEBRA.

FIRST MONTH.

Powers and ropts. Involution, of a monomial, of a binomial. The binomial theorem; study this until pupils are able to expand a binomial readily. Involution of polynomials; evolution. Root, degree of a root, radical sign, index, the double sign $\pm$; an even root of a positive quantity; odd root of a quantity; even root of a negative. Extraction of roots, of a fraction, of a monomial, square root of a polynomial, of a numerical quantity.

SECOND MONTH.

Extraction of cube root, of polynomials, of numerical quantities, higher roots. Quadratic equations, pure or incomplete, form of, roots, solution,

affected quadratics, equation or complete quadratic equation, form of, all may be reduced to four, solution of numerical affected quadratics, of literal. Equations of the quadratic form.

THIRD MONTH.

Formation of equations when the roots are given. Solve many problems of one unknown quantity, of two unknown quantities. Special cases, one equation of the second degree and one of the first, by squaring members of one equation, by division, by removing a common factor, by substituting value of one letter in the other. Interpretation of negative results.

FOURTH MONTH.

Exponents, radicals, and inequalities; fractional and negative exponents; multiplying or dividing both terms of fractional exponents; how negative exponents may arise; value of a quantity affected with a negative exponent; transferring a factor from either term of a fraction; clearing expressions of negative exponents; expressing fractions in integral forms; raising quantities to powers by changing the exponents; extraction of roots by changing the exponents; multiplying and dividing quantities by operations upon the exponents. Radicals, definitions, reductions, addition, subtraction, multiplication, and division of radicals.

FIFTH MONTH.

Involution of radicals, evolution, rationalization; to rationalize the denominator. Imaginary quantity, reduction of, square root of binomial surds. Solve many examples of all forms. Radical equations, character of roots, real or imaginary. Give much practice in determining the character of roots. Inequalities, symbol of, how read, members, same sense, contrary sense. Review radicals.

SIXTH MONTH.

Ratio; definition, terms, expression of the value of the ratio, of the antecedent, of the consequent; effect of multiplying or dividing either or both terms; compound ratios. Proportion, definition, simple and compound; couplet, mean proportional, propositions, the product of extremes, product of two quantities equal to the product of two other quantities; alternation, inversion, composition, division, by composition and division; two propositions having a couplet in each equal; antecedents alike, consequents alike, equimultiples of two quantities, equal parts, like powers, like roots, products and quotients of like terms, mean proportional, limiting ratios, infinites, finite constants, infinitesimals, discussion of variables.

SEVENTH MONTH.

Progressions, arithmetical series, terms, common difference, ascending series, descending, formulae, for last term, for the sum, examples, geometrical series, definitions, formulae, for last term, for sum, examples, infinite series, convergent, divergent, limit of a convergent series, examples involving infinite series; as, circulating decimals.

EIGHTH MONTH.

Review. Learn definitions, solutions, rules, and principles thoroughly. Mathematical studies must be committed to memory as well as understood. Do not fail to learn and remember.

ZOOLOGY.

FIRST MONTH.

Nature.—Kingdoms, dead matter, living matter, composition of living bodies, minerals and organized bodies compared, structure, size, and shape, phenomena, one at rest and increase by external additions, the other grow from within, reproduce their kind, and die. Plants and animals distinguished; as to origin, composition, forms, structure and physiology. Relation between minerals, plants, and animals. Life, protoplasm, manifestations of life, cause of organization, cells, nucleus, nucleoli. Tissues, epithelial, connective, cartilaginous, osseous, dental, adipose, muscular, nervous. Organs and their functions, phenomena of life, nutrition, motion, sensation, definition of nutrition, operations of nutrition. Definition of food, organic and inorganic, tissue forming.

SECOND MONTH.

How Animals Eat.—Prehension of food, liquid food, compare many examples, solids, the amoeba, polyps, jelly-fishes, snails, earth-worms, beetles. Methods of prehension among vertebrates. Mouths of animals; amoeba, polyps, parasitic worms, lobster, butterfly, bees, mosquito, fly, birds, mammals. The teeth of animals; vertebrates, fishes, mollusks, serpents, poison. Deglutition, lowest forms; in serpents. The alimentary canal; digestion, of the amoeba, hydra, mollusks, fishes, birds, quadrupeds; ruminants, man.

THIRD MONTH.

Digestion, Circulation, and Respiration.—Object of, dissolved, changed in composition; chemical preparation, how produced; secretions, chyme, chyle; digestion in man. Absorption, how performed in lowest forms, in insects, vertebrates, by capillaries, lacteals, thoracic duct. Blood, of invertebrates, colors, vertebrates, composition of blood; blood corpuscles, size, shape, and color, functions of the blood, circulation of the blood, vessels, structure of arteries, veins, capillaries, two sets of capillaries; circulation in lowest forms, in insects. Differences in structure of heart in animals, cold-blooded, warm-blooded, cause of blood currents. Respiration; objects, air-breathers; water-breathers, gills, tubes, lungs. What animals breathe by the skin? How do insects breathe? Vertebrates? Secretion and excretion. How performed in lowest form of animals? Simplest form of secreting organ; follicles, glands, salivary, liver, pancreas, gastric follicles. Excreting organs; the lungs, the kidneys and the skin.

FOURTH MONTH.

The Skin, Bones, and Muscles.—Skin defined; animals without a skin; polyps, worms, mammals; shedding of skin and its appendages. The exoskeleton, endoskeleton; of the sponge, the crab, of insects, of fishes, of snakes. Hair, feathers. Bones; differences in bones, the skeleton of the lowest vertebrate, a typical vertebra. The skull of man, names of bones, how joined. How animals move; contractility, pseudopodia, cilia, muscular tissue. How a muscle contracts; white muscle, red, striated; extensors, flexors. Locomotion of animals, in water, in air, on solids.

FIFTH MONTH.

Nervous Matter.—Cells, fibers, tubes, ganglia, nerves, sensory, motor; arrangement of ganglia in lower animals, in vertebrates, the brain and spinal cord, functions of the brain, cerebrum, cerebellum, medulla, functions of the spinal cord. The sympathetic system. The senses; sensation, touch, where

most acute. Taste; not always developed, animals possessing it. Smell; in what animals developed most? Why? Hearing, simplest form of the organ; where located, parts of the ear in man, the essential part of the organ of hearing. Sight; forms of the eye, compound eyes, ocelli, the eye of man. Instinct; intelligence, definition of each, evidences of intelligence in animals, voices of animals, vocal apparatus of birds, of man.

SIXTH MONTH.

Classification of Animals.—Classification not easily made; plans of structure, Protozoa, Spongidae, as examples. Species, genus, family, order, class, sub-kingdom. Classification a process of comparison. Protozoa and divisions; Metozoa and divisions; Sponges, Hydrozoa, Anthozoa, soft-bodied polyps, coral polyps, star-fishes, Vermes, tape-worm, trichina, marine worms, Mollusks, Gasteropods, Pteropods, Pulmonates.

SEVENTH MONTH.

Cephalopods, Arthropods, Crustacea, Arachnids, Myriapods, Insecta, Neuroptera, Orthoptera, Hemiptera, Coleoptera, Diptera, Lepidoptera, Hymenoptera, Tunicates, Vertebrates, Acrania, Craniota, Fishes, Amphibia, Reptiles.

EIGHTH MONTH.

Aves; classes and sub-classes. Mammalia. Review.

PHILOSOPHY.

FIRST MONTH.

Matter, definition, divisions, atoms, molecules, masses. Attraction, forms of. gravitation, cohesion, adhesion, chemical affinity. Motion, forms of, physical change, definition of physics, physical properties, divisions, impenetrability, weight, inertia, etc., characteristic properties. Conditions of matter, solid, liquid, aeriform. Motion, force, dynamics, momentum, laws of motion, action, reaction, reflected motion, law, angles. Gravitation, laws, gravity, weight, laws, center of gravity, equilibrium, line of direction.

SECOND MONTH.

Falling bodies, velocity, laws, initial velocity, increment of gravity, formulas. The pendulum, laws, uses. Energy, work, elements of work, measure, unit of work, horse power, kinetic energy, potential energy. Machinery, principles, a machine, uses, laws. Levers, classes, laws, balance, true and false, compound lever. Wheel and axle, law, forms, connecting wheels, uses, velocities. Pulley, fixed, movable, law. Inclined plane, wedge. Screw, definition, law, uses. Friction a transformer of energy.

THIRD MONTH.

Liquids, pressure, transmission of, Pascal's principle, Pascal's experiment, hydrostatic bellows, press, pressure due to gravity, downward pressure, rule, upward pressure, lateral pressure, equilibrium of liquids, Archimedes principle, floating bodies, specific gravity, standards, flow of liquids, of rivers. Water power, turbine wheel, overshot, breast, undershot wheel. Pneumatics, tension of gases, weight of air, pressure, Torricelli's experiment, measure of air pressure, air pump, a condenser, lifting pump, force pump, siphon.

FOURTH MONTH.

Electricity and magnetism, electric attraction, repulsion, electrifying by friction, conduction. Galvanic electricity. Magnets, temporary, permanent, compass, nature of electricity, manifestations, two kinds—positive and negative, law, electroscopes, conductors, tension, potential, electromotive force, unit a volt, unit of resistance, charging by contact, induction, polarization, theory of electricity, the electrophorous, charge on the surface, density at points, machines. Leyden jar, construction, charging, discharging. Lightning and lightning rods.

FIFTH MONTH.

Voltaic electricity, currents, voltaic current, direction, unit of current the ampere, unit of quantity, voltaic cells, Smee's cell, Daniell's cell, etc. A voltaic battery, arrangement of cells, thermal effects of current, luminous, physiological effects, chemical, magnetic, the telegraph, galvanometer. Thermo-electricity, magnets, natural, artificial, poles, attraction, laws, magnetic field, magnetizing by contact, induction, earth a magnet, the needle, dip, declination, electro-magnets.

SIXTH MONTH.

Induced currents, circuit, effects of closing or breaking a circuit, extra current, Ruhmkorff's coil, armature, dynamo-electric machines, electric lamps, incandescent, the brush lamp. Telephonic current, circuit. Sound, definition, undulations, cause, propagation, wave length, sound waves, media, velocity, noise and music, tubes, reflection, the telephone, action, transmitter, sympathetic vibration of cords, sounding boards, re-enforcement of sound, interference, tones, fundamental, overtones. Heat, produced, temperature, thermometer. Expansion by heat, solids, water, gases, absolute zero.

SEVENTH MONTH.

Liquefaction and vaporization, fusion, laws, evaporation, ebullition, laws, distillation, latent heat, of fusion, of solution, solidification, of vaporization, condensation of gases. Latent heat of water, of steam. Specific heat, definition, of water, conduction, convection, radiation, refraction of heat, reflection. Thermo-dynamics, heat from percussion, chemical action. The steam engine, condensing engines, non-condensing. Light, luminous bodies, transparent, translucent, opaque bodies, rays, beams, motion of light, inverted images, velocity, intensity.

EIGHTH MONTH.

Reflection of light, law, diffused light. Mirrors, plane, concave, convex, focus, images, real, virtual. Refraction of light, laws, refractors, plates, prisms, lenses, center of curvature, optical center, axis, principal focus, conjugate foci, magnified images, solar spectrum, dispersion, white light. Color, the rainbow, camera, the eye, microscope, telescope, magic lantern, stereoscope. Conservation of energy, correlation of energy. Review.

SUPPLEMENTARY READING.

It is not enough to teach children to read; they must also learn to love to read and *to read good books.* The prescribed reading books used in school, offering frequently only extracts, are very useful in language instruction, but in our age of reading, they do not furnish sufficient means for the cultivation of the *reading habit.* Reading for information, for refined amusement, for elevation into higher spheres of thought and action, requires more than one book a year. The publishing houses, ever ready to cater to the tastes and

needs of the educational public, have placed on the market some of the best juvenile books for use in school and the home circle. School libraries may effect much in this line by furnishing matter for home reading, but to create a taste for reading, something more should be done *in* school.

The supplementary reading matter should be given out only once or twice a week, and for an hour the class should read, under the guidance of the teacher, entire compositions, which tend to awaken and keep alive the interest of all who participate in, and are capable of being benefited by such reading. While in the regular lesson from the class reader, language and grammatical instruction should receive its share of attention, in supplementary reading the principal attention should be given to the content of the composition. Geographical, historical, mythological, scientific, and moral allusions receive ready interpretation at the hands of the teacher by the help of the dictionary, cyclopedia, and gazetteer. By affording this help, the teacher really deserves his name—he instructs, elevates, and builds up in the minds of the children those ideal states of mind which lead to a culture of the heart and the refinement of the being. To attain this end, the teacher must possess a stock of information, culture, and refinement himself, which raise him above the mere hearer of recitations. His enthusiasm for the characters and conditions portrayed in the compositions needs must kindle in the minds of the young that holy warmth which makes the school attractive and efficient for good. Yet, the reading of supplementary matter should not become trite and commonplace. For independent reading, the supplementary books should not be given out until the composition has been mastered, so that slovenly, thoughtless skimming over the matter may be avoided. Such unscholarly procedure deadens sober, deep, and serious thought, and creates day-dreamers, visionaries, and frivolous readers who consider the reading mere pastime and sport.

Supplementary reading should be within the pupil's comprehension rather than above it, and should not begin before children have finished the second reader. But after that is accomplished, such reading should be had in the measure above indicated. American and English literature, also good translations from the classics of other languages, present an inexhaustible source of gratification to the teacher and scholar. Seek and ye shall find; knock and it shall be opened unto you.

VOCAL MUSIC.

At the request of many teachers and county superintendents a few directive remarks on vocal music are added to this course. Many consider the art of teaching singing as very complicated and difficult. When the highest effects on the stage or in the concert room are to be attained, this is undoubtedly true. However, the object of teaching singing in school is no more the production of operatic or concert singers than teaching drawing should make painters, or the study of mathematics, astronomers. The object of all school instruction, is, and can be nothing else, than the awakening of all the dormant powers that slumber in the human mind. Nothing that nature has laid into the human soul should be allowed to stunt or to lead a maimed existence. Hence the necessity of instruction in the elements of vocal music in the common schools. The further cultivation of the powers and faculties must be left to individual effort and enterprise. But the sense of music is inborn into every human soul, and, while it may not be contended that all can learn to sing, all can learn to appreciate song music.

Among all the arts, singing is the one most readily acquired. It requires

no apparatus, no instrument; the voice is ever ready to respond to the call. Of course, the voice needs some training and the mind some instruction to the end that the former may unite in harmony with other voices. Because singing is the art which all can practice without expense, it is the one that may universally be made useful in teaching the appreciation of the beautiful as well as through it to lead to morality. "For through the portals of aesthetics can man be led into the realm of ethics."

The child's voice is a very subtle instrument though, any harsh treatment or over-straining of it, especially during the age of mutation, may destroy its sweetness and timbre forever. For this reason, from the very start, screaming and shrieking should be avoided. All singing should be in soft accents; children should be taught studiously to refrain from a high pitch or loud singing.

During the first year of school life, the children should not be taught anything about notes or tones; all they may learn then is easy songs adapted in melody and words to the childish mind and understanding, by rote. Teachers should be careful to cause the children to sing pure tones; neither nasal twang nor bellowing should be permitted. Be careful at all times to avoid the sensational; the ranks and tares in music should never be permitted, if the musical taste is to be refined. Just as we strive to keep from the hearts and minds of children sensational literature, so the poisonous in music should be kept out of their reach.

Toward the end of the first and the beginning of the second year, systematic instruction may begin, and the first element to introduce is that of time. The children may learn to beat time. It is essential that in beating time, proper stress be laid on the accented beat, on *one* in double time, on *one* in triple, and *one* and *three* in quadruple time. (It does not follow that these three kinds of time should be learned in rapid succession and even in one year; double, and perhaps, triple time will be enough for an entire school year.) To lay a good foundation, the class may be caused to march in double or triple time so as to make rhythm second nature in the children.

For musical notation in the elementary stage, nothing is better adapted than the numbers from 1 to 8. When the tone 1 is fixed, the tone 3 is learned and the two (1 and 3) persistently practiced so that a mistake is impossible. At the same time these exercises in pitch are so connected with exercises in time, teaching whole notes and half-notes, tones receiving two beats or one beat, respectively. Then drill on the tone 5 and extend gradually to 8, always being careful to drill in connection with exercises in time. Simple songs embodying the tones learned may be successfully introduced at this stage. In like manner tones 2, 4, 6, and 7 may be introduced and drilled on in connection with time exercises. The natural scale being now developed, exercises in pitch throughout it may be instituted. Rote singing to enliven the exercises and all school work, should be continued all the time.

When so much in music has been learned without help of a reader, a musical reader of which there are some very good ones published by the several book houses, may be introduced. An instrument, an organ, or a piano, is not essential; the pupils will develop much more freely, when the instrument does not interfere. A tuning fork or pipe to give the key note is, however, indispensable. There is no doubt that, if the the teacher is *willing*, elementary vocal music may be made a part of the exercises in every school, and its beneficial influences will be felt in government as well as in the instruction and moral conduct of the children.

OBSERVATION WORK.

INTRODUCTION.

The pupils need no text-books in the work outlined in zoology, botany, and physics. In fact, books would do more harm than good. The chief object for the teacher to keep in mind is to get the children thoroughly interested in the study of nature and its beauties. To do this it is necessary that they come directly in ontact with the objects talked about, that they see and feel for themselves; that they themselves perform the experiment and draw the conclusions. The teacher should carefully direct the investigations of the pupils, and not tell or show too much, even if the work does progress slowly. If thorough interest is awakened in the subject-matter taught, the pupils will be made thoughtful and observant along these lines and will be continually acquiring useful knowledge: thus the chief objects will be accomplished. Representation of the simpler forms by drawings, compels a more careful study, and also affords a means of preserving many results, otherwise lost.

ZOOLOGY.

NOTE.—Carefully read what is said about science work under "Alternation of Work" in the introduction to this Course and have a class in Zoology in 1894-5; a class in Botany in 1895-6; and a class in Physics in 1896-7.

FIRST MONTH.

In what places have you found insects? (Under stones, in walls, and grass, on leaves, etc.) What were they doing? (Observe them repeatedly.) What means have insects of escaping from their enemies? (Observe their color, sting, manner of flight, etc. Give numerous examples.) Study butterflies especially. What do they eat? Where and how do they get it? Do they visit all flowers? Where do they stay at night?

SECOND MONTH.

Collect the larvæ of moths (large green, and brown worms) and of butterflies (caterpillars) and put them in small boxes covered with mosquito netting. Feed them with fresh leaves from the plant on which they were found. Note the changes daily. Keep them through the winter and note the changes in spring. What becomes of insects during cold nights? What becomes of butterflies? Of bees? Of grasshoppers? Of flies? Can you find any insects preparing to live through the winter? Which ones seem most intelligent? Why?

THIRD MONTH.

What birds are with us now? Were they here all summer? What is their food? What substitute for migration do many animals have? Give examples. (Hibernation). Search for insects under stones, leaves, etc. Have they lined their nests in any way to protect themselves from cold? What changes do we make in our clothing as winter approaches? (In material, color, thickness, etc). Do animals make similar preparation for winter? Examine feathers of birds and note their uses. Examine covering of dogs, cats, horses, etc.

FOURTH MONTH.

Can any of the summer birds be found? If so, what are they? Have you found any newcomers? Where have they come from? What is their food? Do they sing? Are they building nests? Is there any insect life

abroad? Watch sharply on warm days and in sheltered places. Hunt for earthworms. How deep do they burrow into the ground? In what condition do fish, crayfish, and frogs spend the winter? Look for these under leaves, and in mud along sides and in bottom of ponds. Contrast the dog and cat in drinking; in walking. How does it happen that the cat can move so much more quietly than the dog? Why is that necessary? (Note the difference in the motions of the trunk and in the flexibility of the joints as they step).

FIFTH MONTH.

Why have not all animals migrated? Is it due to superior or to less intelligence, or to neither? What wild animals are spending the winter with us? Which ones store up food for winter? Where do they obtain it? What do the others eat? How do these animals protect themselves from cold? How does a rabbit run? How does its running differ from the running of a cat or dog? How does a cat differ from a rabbit in making a spring? In which are the hindquarters, compared with the forequarters, the better developed, in the rabbit or the cat? Compare both of these with the dog. Talk about the habits of our wild animals; e. g., where they make their homes, how they drink, etc.

SIXTH MONTH.

Compare the food of cow, cat, bird, etc.; also their methods of taking hold of it. How are these animals differently constructed so as to seize, chew, and digest such food? Which ones make use of their fore limbs in managing their food? Note the use of the lips when drinking and eating; also the position and shape of the teeth and their use. Note also the use of the tongue and the movements of the jaws. Which is fitted to eat the shortest grass, the cow, horse, sheep, or goat? Why? What effect does that have upon the kind of pasture men give to these animals? See geographies.

SEVENTH MONTH.

Let each pupil keep a record of the return of birds. Have any of the winter birds disappeared? Is the plumage of those that have returned changed any? Do they sing? What is the food of the birds that return earliest? Do they begin nesting immediately? Do they repair and use old nests? What are the most serious dangers that threaten those that first return? What kinds of insects are abroad this month? Where do they stay and what are their habits? What enemies have they and upon what do they depend for safety, defense, concealment, and flight? What have you observed about the earthworms? Examine the cocoons gathered last fall, or such as are found upon twigs of trees, bushes, etc. Do they show any signs of life? (Study the silk industry in this connection, if possible.)

EIGHTH MONTH.

Why are earthworms so abundant after a rain? What is the meaning of the small heaps of earth at the entrance of a burrow? How many burrows are there in a square yard of ground? Count several and find the average. Carefully clean away the little heaps of earth from about the burrows in a square yard and next morning gather all that has been cast up during the night. Dry and weigh it. At the same rate how much would be brought to the surface on one acre in a single night? In one month? What are the effects upon the soil? Upon objects lying upon the ground? Find the depth of a burrow and make a diagram of it. What is the food of earthworms? Their enemies? Their means of protection and methods of locomotion? Observe birds, their modes of flying, their speed, places of nesting, etc. Sketch a few of the common insects. Note their food, number of their wings, their means of protection, etc.

BOTANY.

NOTE.—Carefully read what is said about science work under "Alternation of Work" in the introduction to this Course, and have a class in Zoology in 1894-5; a class in Botany in 1895-6; and a class in Physics in 1896-7.

FIRST MONTH.

Have trees finished their growth for this season? How can you tell? Is the same true of other plants that you know? Have old trees grown as rapidly as young trees? Name the trees that grow fastest. Which are the most beautiful trees? In what respect are they beautiful? What colors are most common among ripened fruits? Why? In what way do fruits protect themselves in order that the seeds may become ripe? Collect seeds and fruits of all kinds; dry and preserve them carefully in envelopes or bottles.

SECOND MONTH.

Examine twigs to see if there is much sap in them. What has become of the sap? What causes the leaves to fall? Is it fortunate for the trees that they fall? Why? Continue to collect seeds, nuts, etc. How have plants provided for distribution of seeds? Note contrivances by which seeds of weeds are scattered. Examine dandelion, thistle, burdock, etc. Of what help is the wind to seeds? Give examples. How do animals help to distribute seeds?

THIRD MONTH.

Examine the rootlets of several plants. When is the proper time for transplanting trees? What special care should be taken if they are transplanted at other seasons? Can it be said that trees hibernate? Why? What provision have trees made for the coming year? How about annuals? Biennials? Perennials? Do the first frosts kill any of the newly grown twigs? Examine as many different kinds of trees as possible. How does the number of seeds produced by plants that are killed by cold each year compare with the number produced by plants that live from year to year? Give numerous examples. Which of these two classes seems to have the better mode of scattering its seeds? Take plenty of time in working up this topic so that a large number of examples may be cited by the pupils.

FOURTH MONTH.

During a hard freeze examine the smaller twigs. Are they frozen through? How protected? Open the buds; are they frozen? How are they protected? Are they wet through when it rains? Note the shape of trees. Draw an outline of several common ones. Which ones are in least danger from being broken by sleet and strong winds? Why? (Note method of branching, strength of wood, etc.) What is the wood of the trees used for? How is it prepared for use? (Read about wood manufactures, lumbering, etc.) Note the rings in the cross section of a branch; what has caused them? Compare the wood of various trees as to its hardness, porosity, color, odor, weight, usefulness, etc.

FIFTH MONTH.

Examine a large number of buds of different trees to discover if they are dead. Make collection of buds and find what per cent have been killed. Does the bark of trees have rings? (Examine trees with thick bark to find out.) What is the cause? Why are there not so many rings to be found in the bark as in the wood? Why does the bark become split so badly? Of what use to the tree is the old, dead bark? How does the bark of a single tree vary in color? What is the cause? Make a collection of cross sections of trees; also of longitudinal sections. How do the two differ in appearance? Can you recognize a tree by its bark?

SIXTH MONTH.

Is there any flow of sap in trees at this time? When are maple syrup and sugar made from the maple? Why then? How are they made? Where? Do you find any twigs that are dead, as well as buds? Examine some evergreens of different kinds; do they ever shed their leaves? When? Are the leaves that remain on the trees living? Can you see any regularity in their arrangement? Are the leaves grouped in the same way in different kinds of evergreens? Notice the pitchy substance under the bark; how does the tree make use of it to heal wounds? How does it prevent fence posts from rotting rapidly? Find how pitch, turpentine, rosin, and tar are manufactured. Where?

SEVENTH MONTH.

Can you by examination, determine the extent to which the roots of trees are spread? How does it compare with the spread of the top? On what part of the roots are the rootlets mainly found? Where, then, would it be best to pour water when watering trees? Where do the leaves of trees manage to drop most water when it rains? Are the buds of trees changing any? Cut the twigs of several trees to see if they bleed. Why do men girdle trees in order to kill them? Where does growth take place in a tree? What part of a tree is really alive, then? When would you trim trees? Why? Show process of germination by planting seeds in pots, boxes, etc., or in cotton on water in glasses.

EIGHTH MONTH.

Notice the arrangement of buds. Are all those on a single tree equally advanced in development? Keep a record of the dates when trees blossom and when they put forth their leaves. What common flowers do you know? Keep a record of the dates of their appearance. How many parts do flowers have, and what are the parts for? How are insects of assistance to flowers? Plant some of the seeds gathered last fall. Where do little plants find their food which supports them until their roots and leaves are sufficiently developed to feed them? Make drawings of the plants at different stages of growth. In some place, not likely to be disturbed, mark off a square yard of ground and count the different kinds of plants it produces. Can you tell where the seeds for so many plants come from?

PHYSICS.

NOTE.—Carefully read what is said about science work under "Alternation of Work" in the introduction to this Course, and have a class in Zoology in 1894-5; a class in Botany in 1895-6; and a class in Physics in 1896-7.

FIRST MONTH.

Place small amounts of water in several differently shaped vessels and allow them to stand exposed to the air for several days. What becomes of the water? Under what circumstances will it evaporate most rapidly? Note the varying effects of a wide extent of surface; of currents of air passing over the surface; of direct sunlight, darkness, heat, cold, etc. What causes mud to dry up? What becomes of dew, frost?

SECOND MONTH.

How does water change its form when it evaporates? What causes it thus to change its form? What are the effects of heat? Of cold? Is vapor pushed up or pulled up? Explain by having children perform numerous experiments. Can you account for the formation of clouds? What is the history of a drop of water? Of what use is wind in this connection?

THIRD MONTH.

What causes dew? Frost? Why does the earth become cooler after sunset? Explain the process by which water cools. Which cools faster, land or water? What effect must that have upon climate? Give examples. Is the formation of dew or frost dependent upon clearness of night? (Keep a record before answering). Why is it so? What causes wind? Have children perform numerous experiments to explain this.

FOURTH MONTH.

Have children perform experiments showing that air takes up space. For instance, push an open bottle, mouth downward, into water. Note whether or not the water enters and why. Have several experiments performed showing that air has weight, is exerting pressure. For instance, heat the bottle and push it into water, mouth downward. Hold it there until it cools and observe what happens. The cause? Let experiments show why water rises in a common pump. Is it pushed up or pulled up? What are the valves for? Explain force pump. How will you keep the pump from freezing?

FIFTH MONTH.

Is there any air in water? How can you tell? What takes place when water is heated in a pan? Why is it fortunate that water expands before it freezes? What are thermometers for? How would you make one? How is it possible to have more than one kind of thermometer? (Fahrenheit and Centigrade). Why should a person have a thermometer in a room? Where should it be placed? Why? Are there currents of air in a room? (Try the space over a stove, or a lighted lamp; also the cracks at doors and windows. Use a lighted lamp or taper in looking for a draught). What is the cause of these movements of air in a room? Can you account for their direction?

SIXTH MONTH.

Compare the heating of air in a room with the heating of water in a pan. Also with the heating of water in a lake. In what part of a room (top or bottom) does the thermometer rise higher? Why? How would you ventilate a room? How test the purity of air in a school room? (By the odor when a person enters from fresh air outside). How are furnaces made to heat houses? Do they provide at all for ventilation? Of what help may a fireplace be for ventilation?

SEVENTH MONTH.

What proofs are there that the earth attracts objects? What advantages do you see in the fact that objects have weight? Let it be seen, by experiments, what is meant by *centre* of gravity. What causes pendulums to swing? What facts can you discover by experimenting with pendulums? How would you regulate a clock by its pendulum?

EIGHTH MONTH.

Have children perform experiments showing what is meant by specific gravity. How is a knowledge of this subject of any use? Magnetize a large knitting needle by rubbing it over the poles of a magnet and make a compass of it. Why does the needle point in the direction in which it points? What useful purposes can you think of to which a compass may be devoted? What two directions does it give directly? What two indirectly? Make use of the needle in determining the direction of the wind; of the road home; the directions toward different places, buildings, etc., in the neighborhood.

FORM STUDY AND DRAWING.

The Specific Object.—1. The training of the general intelligence by bringing the child into contact with the type forms of nature and art, and through a study of these, to a fuller understanding of the objects which surround him.

2. The more complete training and development of the powers; (*a*) of observation, (*b*) of thought, by the association and comparison of objects, stimulated through making and drawing.

3. The training of all the powers of expression, thus more fully fitting him for the performance of the duties of life.

4. The development of care, cleanliness, accuracy, and morality through doing things that are to exist beyond the mere time of action and by the forming of mental standards of what is right and wrong, good or bad, in all that relates to construction of objects, their representation and their decoration.

5. The development of æsthetic feeling, by bringing the child into contact with objects simple in character, but beautiful in proportion and outline.

In the first two years of the course all the simple type forms are studied according to the following plan:

METHODS OF STUDY.

SOLIDS.	TABLETS.
1. By sight—by observing the appearance of models in different positions.	1. By sight—by observing and comparing.
2. By touch—by grasping, by handling, by moving, by placing models.	2. By touch—by handling and placing.
3. By pleasing arrangements of models in rows, or by building.	3. By use in arrangements to represent objects, and for borders and arrangements around a centre.

ORDER OF STUDY.

1. As a whole—how it feels, moves, looks, its name.	1. As to shape and name.
2. As to surface—round, rounding, plane, curved.	2. As to edges or sides—number, quality, relation.
3. As to edges—straight, curved.	3. As to corners or angles—number, kind.
4. As to corners—square, sharp, blunt.	

WAYS OF EXPRESSING.

1. By making—clay modeling, paper cutting and pasting.	1. By folding, cutting, mounting figures, borders, and arrangements around a centre, using colored paper.
2. By drawing with free-arm movement.	2. By drawing—proper pencil holding, free movement, broad lines.

Suggestions.—The blackboard should be used freely throughout the course. When a new subject is taken up, paper work should give way to board work. In paper work, the pencil should be held lightly about four inches from the point, at an angle of about thirty degrees to the paper. In drawing straight lines, the pencil should point in a direction at right angles to that of the line drawn. Draw circles and ellipses with a continuous movement, beginning at the lowest point and moving up to the left and around to the starting point.

Free work should be obtained by the whole arm movement. Pencils should be of medium grade, and the lead should have a round point, not a sharp point. In the seventh year, water color paints may be substituted for colored paper in decorative work, and most pleasing effects produced by filling in the design drawn with tones of the same color. The color, as well as the form sense, should be cultivated throughout this course.

Designs and Measurements.—Decorative designs should express strength, stability, and repose. A decorative design should cover about two-thirds of the space to be ornamented.

Commencing with seventh year, pupils should practice measurement in space of the several proportions of an object, doing this by means of a pencil held (*a*) vertically, (*b*) horizontally in the right hand, with the forearm stretched to its utmost. From seventh year onward, foreshortening in connection with perspective should be studied attentively, and pupils required to work more and more independently.

NOTE.—Owing to the nature of the subject, and the imperfect knowledge of it on the part of teachers, it has been thought best to outline the work very fully, specifying the more important things which the pupil should be led to see and to do, and the order he should follow in his study of the various objects. The work which is here made to cover eight years, may, after it has become thoroughly established, be done in five years. In schools where drawing has not been taught, and the teacher is inexperienced in the subject, the first two or three years' work may be given to all the pupils.

FIRST YEAR.

Materials.—*Models:* Sphere, cube, cylinder; circle, square, oblong; clay, sticks, colored paper, drawing paper.

Models Studied as Wholes.—Names. Placing on desks or one on the other, requiring use of terms, *on*, *under*, *middle*, *centre*, *near*, *far*, *above*, *below*, *front*, *back*, *right*, *left*. Action—sphere will roll and stand; cube will stand and slide; cylinder will roll, stand, and slide. Modeling sphere, cube, and cylinder. Naming objects of same shape, and bringing objects of same shape to school. Arrangement—touching and apart; in rows by ones and twos, alternately; by building, using like solids or dissimilar ones.

Surface.—Models studied as to surface—round as on the sphere, plane as on the cube, curved and plane as on the cylinder. Modeling type solids and objects having the general shape of these solids, as apple, cherry, peach, grape, etc., from sphere; box, basket, dice, inkstand, etc., from cube; bottle, muff, jug, rolling-pin, firecracker, etc., from cylinder. Terms, standing, lying, upright, top view, and front view, as applied to cylinder.

Faces.—Models studied as to faces—sphere has one round face; cube, six plane faces; cylinder, one curved face and two plane faces. Shape of faces—circle, as on sphere and ends of cylinder; square, as on cube; oblong, as on curved face of cylinder. (Have pupils select and name corresponding tablets and objects having the same shape.) Position of faces—vertical, horizontal, opposite. Arrangement of tablets in rows on desk in as many ways as possible. Continue modeling.

Edges.—Models studied as to edges—curved, as on cylinder; straight, vertical, and horizontal, as on cube; no edges, as on sphere. Stick-laying to represent edges, face of cube, profile of cylinder, and other familiar objects. Tablet-laying—rosette forms, with center tablet overlapping, and borders, using sticks and tablets. Drawing edges, files, faces, tablet and stick arrangements. Exercises in pencil holding and free-hand movement; drawing lines in different positions. Continue modeling.

Corners.—Models studied as to corners—no corners, as on sphere and cylinder; face corners, as on cube (upper and lower left, and upper and lower right hand corners), inside and outside corners (cube, box, paper folding and cutting). Modeling. Tablet and stick laying, and cutting tablets out of colored paper. Drawing.

Review.—Review sphere, cube, and cylinder, taking up likenesses and differences of shape, dimensions, surface, faces, edges, corners, and positions.

Drill until pupils can readily apply those terms to the different models, which describe their position, location, characteristic features, etc. See that pupils have a distinct image of each object without reference to its position, or its relation to other objects.

SECOND YEAR.

Materials.—*Models:* Hemisphere, square prism, right angled triangular prism, semicircle, right angled triangle, clay, sticks, colored paper, drawing paper, models of first year.

Models Studied as Wholes.—Names. Relation of hemisphere to sphere (sphere of clay or other material bisected to get hemisphere, developing terms *equal* and *bisect*). Relation of square prism to cube (cube bisected from left to right and front to back, making four square prisms); relation of triangular prism to square prism (square prism bisected through corners, making two triangular prisms). *Action*—hemisphere will stand, rock, and slide; square and triangular prisms will stand and slide. Modeling hemisphere and square and triangular prisms, comparing model of cube with model of square prism. Naming objects of same shape, and bringing objects of same shape to school. Arrangement—placing and building. Drawing.

Surface.—Models studied as to surface—round and plane, as on the hemisphere; plane, as on the prism. Modeling objects having the general shape of these solids, as hat, cap, dish, nest, umbrella, toadstool, half an apple, etc., from hemisphere; book, box, basket, domino, etc., from square prism; paper weight, toy house, etc., from triangular prism. Terms, *top view*, *bottom view*, *side view*, and *end view*, as applied to the models. Drawing.

Faces.—Models studied as to faces—hemisphere has one round and one plane face; square prism, six plane faces; triangular prism, five plane faces. Shape of faces—circle and semicircle, as on hemisphere, square, triangle, narrow, and oblong, as on square and triangular prisms. (Have pupils select and name corresponding tablets and objects having the same shape). Position of faces—vertical, horizontal, oblique. Relation of faces—parallel, perpendicular, oblique, to each other. Placing of tablets to represent the faces of solids, and for ornamental arrangement. Drawing and modeling.

Edges.—Models studied as to edges—curved, as on hemisphere; straight, as on prisms. Position—vertical and horizontal; oblique, as on triangular prism. Relation—parallel and perpendicular; oblique to each other on triangular prism. Long and short edges of prisms. Dimensions in inches (sighting definite lengths). Stick laying to represent edges and faces. Tablet laying; ornamental arrangements (quarterfoil four-leaf). Drawing edges, faces, and tablet arrangements. Continue modeling.

Corners.—Models studied as to corners—square corner (right angle); sharp corner in triangular prism (acute angle); blunt corner by placing triangular prism on square prism (obtuse angle); right-angled triangle—end of triangular prism. Angles studied with tablets and by paper folding. Table designs in colored paper; mounting. Modeling and drawing.

Review.—Review the six type solids, comparing one with another as to shape, dimensions, surfaces, faces, edges, corners, and other facts that have been observed. See that pupils can recognize and name these solids by touch alone (blindfolded); also that pupils know how to express their knowledge of these forms in accurate language, using terms previously developed; by paper folding and cutting, modeling and drawing. Tablets placed for the top and front views of the type solids studied. Pupils should, at the end of the first year, be able to draw from memory the top and front, end and side views of

the different type solids, and the objects modeled; also a number of ornamental arrangements. While reviewing, have pupil make skeleton model, using sticks and peas. Have them roll strips of paper around cylinder, square prism, and triangular prism, pasting and removing.

THIRD YEAR.

Materials.—*Models:* Ellipsoid, ovoid, equilateral triangular prism, ellipse, oval, equilateral triangle; clay, sticks, colored paper, and drawing paper; models of first and second years.

Models Studied as Wholes.—Names. Action—ellipsoid and ovoid will stand and roll; triangular prism will stand and slide. Modeling—ellipsoid and ovoid from sphere; triangular prism from cylinder. Naming objects of same shape and bringing objects of same shape to school.

Surface.—Models studied as to surface—rounding on the ellipsoid and ovoid; plane on the triangular prism. Modeling the above type forms, and objects having the general shape of an ellipsoid, as lemon, plum, English walnut, potato, etc.; of an ovoid, as acorn, pear, strawberry, mouse, chicken, etc. End and side view as applied to ellipsoid and ovoid. Laying tablet for top and front view of prism. Pencil holding, movement, and drawing.

Faces.—Ellipsoid, ovoid, and equilateral triangular prism studied as to faces and profiles—ellipsoid and ovoid each have one rounding face; equilateral triangular prism, five plane faces. Shape of faces or profiles—ellipse (broad and narrow), as in ellipsoid, oval as in ovoid, oblong and triangular as in prism. (Have pupils select tablets representing faces and profiles, and name them). Circle, ellipse, oval, and square, compared—diameter and center, long and short diameter, diagonal (paper cutting and folding). Tablets combined with tablets of first year in ornamental arrangements. Modeling. Drawing faces and profiles of all the solids studied, taking the solids singly and together; drawing ornamental arrangements made with tablets. Ornamental arrangements with colored tablets. Mounting. Edges and corners (angles) studied as in other solids. Modeling and drawing.

Diameters.—Review long and short diameters as applied to ellipse and oval. Leaves brought into class and their shape compared with ellipse and oval. (Select leaves with entire margins, if possible). Modeling leaves on square tablets of clay. Drawing leaves shaped like an oval or an ellipse. Terms, base, and apex given. Ends of right-angled and equilateral triangular prisms compared; also the tablets having the shape of their ends. Names, right-angled triangle and equilateral triangle applied to the tablets. Drawing.

Paper Folding and Cutting.—By paper folding and cutting, review terms *diameter*, *diagonal*, and *bisect*, and teach equal division into threes and fours. Meaning and use of terms *trisect* and *quadrisect*. Steps: Greek cross, four-pointed star, envelopes, etc., made by folding squares or oblongs into equal parts and cutting. Surface covering by folding squares on their diameters, placing tablets on the small squares, and drawing folds and outlines of tablets.

Comparison.—Proportion 1 to 2—cube compared with square prism, square with oblong, short side of oblong with long side, short diameter with long diameter of narrow ellipse. Proportion 2 to 3—square folded into thirds, and one part folded under or cut off; oblong remaining, folded to make kite form; long and short diameter of broad ellipse compared. Proportion 3 to 4—Latin cross dictated. Objects having these proportions named. Proportions applied in modeling, cutting, and making in paper, and in drawing.

Symmetry.—Axis of symmetry by folding square, oblong, triangle, cir-

cle, ellipse, oval. Axis of symmetry in leaves. Symmetry applied in modeling and drawing.

Review.—Review of sphere, cube, cylinder, hemisphere, square prism, right-angled triangular prism, equilateral triangular prism, ellipsoid, and ovoid, going over their characteristics of shape, dimensions, surfaces, faces, edges, corners, etc.—by modeling the type solids and the objects resembling them; by laying the tablets to represent faces and for ornamental arrangement; by paper folding, cutting, and mounting; by drawing. At this stage pupils should think of an object, of a face, of different views of the type solids, (singly and together), of ornamental arrangements, and express what they think by talking (use of terms), modeling, and drawing.

FOURTH YEAR.

Materials.—*Models:* Cone, square pyramid, vase form; isosceles, and right-angled triangle; clay, sticks, colored paper, and drawing paper. Models of third year.

Objects to be Drawn.—Making paper cube and prism. Pencil holding and movement. Drawing front faces of solids studied, one placed on the other. Drawing a spherical object (apple), hemispherical object (bowl), or object shaped like an ellipsoid or ovoid (potato and egg), each placed on a cube, square prism, or oblong box. Placing tablets for arrangement around centre, term, *rosette;* draw. Dictating simple geometrical forms in proportions and terms given, pupils making rosette arrangements using these forms and mounting and drawing the same. (Cultivate independent work). Modeling tablets in clay, and building up four-unit rosettes on diameters and diagonals. Modeling and drawing simple leaves, continued.

Models Compared as Wholes.—Names; compared as to feeling, action, surface, and faces. Terms, *vertex* and *base.* Cone and pyramid—use of tablets. Modeling cone and pyramid—cone first and pyramid from cone by flattening. Drawing. Naming objects having the shape of cone or pyramid and bringing objects of same shape to school.

The Vase Form.—Vase form studied as to surface (rounding), profile (reversed curve), proportion, axis, symmetry. Attention called to different shapes in vases, and to uses. Modeling vase. Drawing front view, drilling on reversed curves. Draw appearance as a whole. Arrangement developed from equilateral triangle with axes—term, *trefoil.* Cutting out units and mounting to form trefoil; modeling; drawing. Modeling and drawing from memory.

Modifications.—Modification of cone and pyramid by cutting off parallel to base (term *truncated;* term *concentric* from top view) by placing hemisphere on base of inverted cone. Modifications of vase form. Modeling objects having the general shape of cone and modifications, as carrot, or parsnip, top, tumbler, flower pot, etc.; of pyramid and modifications, as paper weight, monument, waste-basket, etc.; modeling vases of different shapes, and jar, from ovoid. Drawing cone, pyramid, and vase form placed on cube, square prism, or oblong box; drawing objects resembling these placed on same. Tablet arrangements for borders and rosettes, and Maltese cross; cutting tablets from colored paper and mounting; drawing arrangements. (Dictate square, and division of sides and diagonals for Maltese cross).

Review.—Review of all the solids studied and all the work based upon them in moulding, cutting, mounting, and drawing.

FIFTH YEAR.

Materials.—*Models:* Sphere, hemisphere, and cube; circle, semi-circle,

square; boxes, baskets, bowls, fans, and similar objects. Fruits and simple leaves. Clay, sticks, colored paper and drawing paper.

Review.—Review of solids and tablets studied, pupils stating in accurate language all the facts previously learned concerning them. (Careful attention to all specific terms taught, seeing that pupils can readily apply them).

Movement.—Exercises for pencil holding and movement, pupils drawing circles, ellipses, ovals, reversed curves, and straight lines in different positions and relations.

Geometric Views.—Geometric views of sphere, hemisphere, and cube. (A geometric view shows two dimensions only.) Naming the different views, —show top view, left side or end view, front view, right side or end view, bottom view. Placing models and objects of similar character and finding the different views. Drawing different views.

Mental Pictures.—Developing mental pictures of the surfaces of the above models, observing relative position of faces. Drawing the outline of faces in the developed surface of the object. Cutting pattern from drawing, leaving laps; folding on lines, bringing together and pasting, giving a model type form in paper. Simple boxes, baskets, and fans, from patterns. Placing paper models and drawing different views.

Natural Forms.—Objects and natural forms (fruits, etc.,) studied (fruits modeled) and drawn as they appear (1) opposite the eye, (2) below the eye. (No attempt should be made at this stage to introduce theoretical perspective—only the simple appearance of the objects opposite and below the eye should be studied.) Simple leaves studied as to outline; modeling and drawing from nature.

Artificial Forms.—Arrangement of tablets and sticks for single figures, borders, rosettes, etc., observing proportion, symmetry, and pleasing repetition. Cutting, arranging, and mounting units of colored paper (original work). Modeling and drawing the arrangements made.

Review.—Review of year's work with modeling and drawing from memory and many original arrangements, etc.

SIXTH YEAR.

Materials.—*Models:* Cylinder, square prism, vase form, circle, square, oblong. Tumblers, boxes, baskets, bowls, etc., vegetables, simple leaves, fruits, etc. Clay, colored paper, and drawing paper. Review of models and objects of third year.

Views.—Geometric views of cylinder, square prism, and vase form, and objects of similar character. Naming different views. Placing and drawing as in third year.

Surface and faces.—The surface of the above models and the relative position of their faces studied. Similar forms made out of paper from patterns previously drawn and cut. Baskets, cylindrical and oblong boxes, etc., made from patterns. Drawing the different views of the paper objects and models. Objects and natural forms (fruits and vegetables) studied, modeled, and drawn, as in third year. Tablet arrangements, cutting and mounting, and drawing, as in third year.

Leaf Forms.—Simple leaf forms studied as to outline, and drawn; drawing conventionalized by balancing on either side of mid-rib. Symmetrical arrangement of the conventionalized leaf forms—cut out of paper or drawn. Modeling both the natural and conventionalized leaf. Numerous

manufactured objects observed and discussed in conversational lessons with reference to their beauty and adaptability to the purpose for which they are intended.

Review.—Review of year's work, giving special attention to character of lines and freedom in drawing.

SEVENTH YEAR.

Materials.—*Models:* Ellipsoid, equilateral triangular prism, cylinder, ellipse, oval, triangles; boxes, baskets, tumblers, tin and wooden measures, jars, and other rectangular or cylindric objects; fruits, leaves, and flowers.

NOTE.—In this year the work should be grouped under the three heads of Construction (delineation of the facts of objects); Representation (delineation of the appearance of objects); Decoration (beautifying of objects). Pupils should be able to apply these terms to the three kinds of drawing. This grouping should be observed throughout the remainder of the course, and the work carried along in parallel lines under these heads.

Construction.—Surface and faces of triangular prism developed; pattern drawn, cut, and folded, to make paper model. Paper models of houses (combination of square and triangular prisms, and cube and square pyramid) made in the same manner. Drawing three geometric views of each of these models, and objects of similar character. Three geometric views of ellipse and oval. (Place the views drawn so as to show their proper relation to each other. Have pupils describe them.)

Representation.—Drawing cylindric objects as they appear when placed in a standing position and above or below the eye; foreshortening—depending upon the distance between the observer and the object, and upon the distance of object above or below the level of the eye. (Distance influences apparent size; position influences apparent form). Grouping fruits, and drawing them as they appear. Drawing natural forms of leaves, and simple flowers.

Decoration.—Geometric units drawn, and repeated in drawing decorative arrangements for simple borders, rosettes, and surface covering. Drawing conventionalized leaf units and conventionalized flowers and parts of flowers; similar arrangements. (Pupils should be led to apply principles of proportion, symmetry, and repetition, in these arrangements. They should also begin to consider the enclosing form and distribution of the ornament over the given surface. Require original work). Review objects and principles of this and preceding years.

EIGHTH YEAR.

The work of this year should be of same nature as that taken up in seventh year, with the addition of a few other models and objects for construction and appearance; as, cube, cylinder, cone, double cone, flower-pots, books, vases, funnels, and other rectangular, cylindric, and conical objects. See that the work is carried on along the three parallel lines developed in the seventh year. Review objects and principles of preceding years.

SCHOOL LIBRARIES.

Importance of the Library.—This is a work that should interest both parent and teacher. Parents should be as anxious to have their children read good books as to have them keep good company, for, aside from home influences, these are the two factors that do the most to mold the character and shape the fortunes of the child. The teacher who does not get beyond the confines of his text-book cannot hope to interest his class very long, or lead them effectually to help themselves. The constant reader of good books is always in good company, and is thus fortified against the majority of temptations that beset him through life.

No system of education is complete that is satisfied with the knowledge that is derived from the text-book merely, and no school is complete that has no library; the public library is the complement of the public school.

Their Cost.—In these days of cheap printing it is easy to secure a library for every district. The law gives directors the power to expend public funds for this purpose and expects them to do it. But if this is not found expedient, the young people, aided by the teacher, by means of literary entertainments and socials, can raise the funds.

Many publishing houses have arranged small libraries specially for schools, and offer them at a cost varying from five to forty dollars. The county superintendent will take pleasure in assisting in any way possible, in this good work.

PRIMARY GRADES.

"Seven Little Sisters."—Andrews.
"Each and All."—Andrews.
"Stories Told to a Child."—Ingelow.
"Little Lucy's Wonderful Globe."—Young.
"Boys of Other Countries."—Taylor.
"Stories in American History."—Dodge.
"Rose and the Ring."—Thackeray.
"The Rollo Books" (ten).—Abbott.
"Tanglewood Tales."—Hawthorne.
"Little Learner Series."
"Little Folks in Feathers and Fur."
"Hale's Stories" (three volumes).
"Water Babies."—Kingsley.

INTERMEDIATE GRADES.

"Zig-Zag Journeys in Classic Lands." [Butterworth.
"Zig-Zag Journeys in Orient."—Butterworth.
"Young Folks' Cyclopædia of Travel."
"Young Folks' History of United States." [Butterworth.
"Stories from English History."—Yonge.
"Young Folks' History of France."—Yonge.
"Young Folks' History of Greece."—Yonge.
"Young Folks' History of Rome."—Yonge.
"Uncle Tom's Cabin."—Stowe.
"Pilgrim's Progress."—Bunyan.
"Robinson Crusoe."—DeFoe.
"Little Women and Little Men."—Alcott.
"Child's Book of Nature."—Hooker.
"Heat and Light" (2 Vols.)—Abbott.
"Twice Told Tales."—Hawthorne.
"Boy Travelers."—Knox.

ADVANCED GRADE.

"Views Afoot Through Europe."—Taylor.
"One Hundred Famous Americans."—Routledge.
"Authors, Princes, and Statesmen."—Parton.
"Old Times in the Colonies."—Coffin.
"Building the Nation."—Coffin.
"Story of Liberty."—Coffin.
"Boys of '76."—Coffin.
"Tales from Shakespeare."—Lamb.
"Life of Longfellow."—Hendricks.
"Vicar of Wakefield."—Goldsmith.
"Poems."—Longfellow, Whittier, The Carys.
"Alhambra, Traveler, Sketch-Book."—Irving.
"Life of Lincoln."—Arnold.
"The Spy."—Cooper.
"The Young Folks' Cyclopædia" (2 Vols). [Champlain.

[The publisher of this Course of Study invites correspondence in reference to above and other books for school and teachers' libraries.]

ILLINOIS TEACHERS' READING CIRCLE.

OFFICERS.

HENRY RAAB, President. CHAS. J. KINNIE, Secretary and Manager.

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OFFICE OF SECRETARY AND MANAGER, ROCKFORD, ILL.

To Teachers and Superintendents of Illinois:

The first year's work of the Illinois Teachers' Reading Circle, as reorganized under the direction of the County Superintendents' section of the State Teachers' Association, is an assured success. Its membership approximates seven thousand. The increase in the enrollment of the Circle and the broadening of its field of usefulness are matters of no little encouragement to directors and manager, and stimulate to redoubled effort for the coming year.

The following reasons that supplement a resolution, unanimously passed by the recent State meeting of county superintendents, pledging co-operation to the interests of the Circle, are pertinent, and are therefore quoted:

1. It tends to unify the teaching force of the State by affording a common line of investigation.

2. It furnishes a definite outline of work for teachers' meetings and institutes, in general culture and pedagogics.

3. It encourages teachers in the accumulation of books bearing on their line of work.

4. It places pedagogical works in the hands of those aiming to teach who would otherwise make an exclusive academic preparation.

Plan of Organization.—At the annual meeting of the State Teachers' Association in December, 1892, the Teachers' Reading Circle was transferred from the General Association to the County Superintendents' section. The charge was accepted, and the earnest support of the section was pledged to the furtherance of its interests. The Reading Circle is under the control of a board of directors named by the county superintendents' section of the association at its annual meeting, the Superintendent of Public Instruction being its president. The board is authorized to arrange a course of reading, to select books, to make rules and regulations governing the Circle, to elect a manager and secretary, and to transact any other business that will conduce to its interests.

Managers.—The state manager and secretary has the general supervision of the work throughout the State, subject to the board of directors. County management is under the control of county superintendents, and the methods of advancing the work in the counties are left to their discretion.

Course of Reading.—The plan of the board of directors is to arrange a definite and progressive course of reading in general culture and pedagogics that shall meet the needs of growing teachers, and to select only such text-books as are adapted to this gradation. Those who may desire to begin the work of the Circle in future will be expected to revert to the first year and read the course as outlined.

Membership.—All teachers in Illinois who may desire to do the work are eligible to membership. No fee will be charged. Others, not teachers, are permitted to become members, and it is especially recommended to those who are preparing to become teachers. The only requirement made of mem-

bers is, that, under the direction of the county superintendent, they pursue diligently the course of reading as outlined by the board of directors.

How to Join the Circle.—Secure an "Enrollment Card" sign your name to this card, and file with your county superintendent. Then secure the books and begin the work. The reading may be done in local circles or individually.

The Reading Circle Year.—The Reading Circle year begins in July and ends in July. Should provision be made on the programs of institutes for Reading Circle work, it would the better enable county superintendents to learn what is being done throughout their counties and to lend the Circle their personal influence.

Certificates and Diplomas.—Two classes of certificates will be issued to those who do the work. First-class certificates will be based on a careful examination, under the direction of the county superintendent. The questions will be furnished by the state manager, and the work will be graded by him. Second-class certificates will be based on memoranda made by the members who do the reading only. Examination questions with full directions will be sent to county superintendents in June. At the close of the course, a professional diploma will be issued for first-class certificates; and a diploma certifying that the course has been read, for second-class certificates.

Books for the First Year, 1893-4.—The books selected for the the first year are Page's *Theory and Practice of Teaching* and *The Schoolmaster in Literature.*

Books for the Second Year, 1894-5.—The books selected for the year beginning in July, 1894, are White's *School Management* and Skinner's *Readings in Folk-Lore.*

These books are in line with the purposes of the board of directors in providing a well graded course of reading for the teachers of the State, and are just from the press.

The popularity of Dr. Emerson E. White as a pedagogical writer, attested by the immense circulation of his former work, *Elements of Pedagogy*, is sufficient guarantee of the value of his new book to teachers, and the choice is a wise one. The selection of the second book of the course for general culture is equally fortunate and opportune, as the investigation of folk-lore is attracting attention the world over. It affords a rich field of thought, and leads to a better understanding of our best literature. The author, Mr. Hubert M. Skinner, of Chicago, has succeeded in placing in one book the gems of a library, and it needs only to be seen to be appreciated.

The price of the *books for the second year* will be ONE DOLLAR EACH, and they will be placed on deposit with county superintendents, or may be ordered in any quantity at this price from the publishers, American Book Company, 521 to 531 Wabash Avenue, Chicago.

Outline of Reading.—An outline of reading will be furnished free to each member. As the whole expense of the Circle to teachers during the year will be light, and as the reading is directly in line of the teachers' regular work, it is confidently believed that but few teachers will hesitate to enroll their names as members. Sincerely yours,

CHAS. J. KINNIE, Co. Supt. Winnebago Co.,
Secretary and Manager.

ILLINOIS PUPILS' READING CIRCLE.

ORGANIZED UNDER DIRECTION OF THE ILLINOIS STATE TEACHERS' ASSOCIATION.

OFFICERS.

JAMES KIRK, President, Springfield. ELIZABETH L. HOWES, Treas., Decatur.
J. F. MCCULLOUGH, Secretary and Manager, Springfield.

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COURSE OF READING.

The books will be sent, prepaid, at the prices given in the list, *but the money must accompany the order in all cases.* One and two cent stamps will be accepted to the amount of fifty cents or less.

SECOND READER GRADE.

2. Fables and Folk Stories —[Scudder.....$ .40 Anderson's Fairy Tales, Part I .....$ .50

THIRD READER GRADE.

3. King of the Golden River.—[Ruskin..... .25 Seven Little Sisters.—[Jane Andrews... .45

FOURTH READER GRADE.

4. Wonder Book.—[Hawthorne..... .40 5. Kingsley's Water Babies.—[Stickney. .50

FIFTH READER GRADE.

6 Tales of a Grandfather.-[Sir Walter Scott. .50 Our American Neighbors.-Fannie E. Coe .55
7. Franklin's Autobiography..... .40 Modern Europe.—[Fannie E. Coe..... .60

ADVANCED GRADE.

The Fairy-Land of Science.—[A. B. Bulkley .75
An Attic Philosopher in Paris; or, A Peep at the World from a Garret. Being the Journal of a Happy Man. From the French of—[Emile Souvestre..... .50
Complete Set, prepaid..... 7.25
About Old Story-Tellers; How and when they lived and what Stories they told.—[Donald G. Mitchell ..... .80
Star-Land; being Talks with Young People about the Wonders of the Heavens. By—[Sir Robert Stewell Ball, F. R. S.... .90

Its Purpose.—The purpose of the Circle is to secure the careful reading of a number of good books at an age when the tastes and habits of the children are forming. Besides the information and culture that will be gained from reading the books of the course, it is hoped that the habit of reading good books may be formed. The best fortification against the evil effects of bad literature is to place good literature in the hands of the child as soon as he learns to read. Parents are earnestly invited to give careful attention to the books that their children are reading. Certainly, the habit of reading good books is one that cannot be too carefully cultivated and encouraged among the young. The aim of the Pupils' Circle is a worthy one, and deserves the encouragement and support of all friends of the children.

The directors appeal to county superintendents, city superintendents, teachers, the clergy, the press, and all interested in the educational advancement of the children of the State, to co-operate with them in carrying out the work of the Pupils' Reading Circle. The books of our course are all good and of well known authorship, and are reasonable in price.

The Pupils' Reading Circle is recognized as an important part of the educational system of the State. During the year just closing fully 10,000 children have read at least one book of the course. The management hopes to have at least one reader in every school where the Course of Study is used.

A postal card will bring circulars giving full information about books, certificates, diplomas, seals, and details of organization.

Address J. F. MCCULLOUGH, Sec. and Manager, Springfield, Ill.

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